BLM

United States Department of the Interior
Bureau of Land Management
Safford Field Office
Safford, AZ

Environmental Assessment
DOI-BLM-AZ-G010-2013-0025-EA

Horse Mountain Permit Renewal

Table of Contents

1.0 Introduction

This Environmental Assessment (EA) has been prepared to disclose and analyze the environmental consequences of the proposed grazing permit renewal for the Horse Mountain Allotment #45240 (Figure 1). The action culminates an evaluation conducted on the allotment under the Arizona Bureau of Land Management (BLM) Standards for Rangeland Health and Guidelines for Grazing Management (S&Gs). In addition, this EA determines if current grazing management practices would maintain desirable conditions and continue to allow improvement of public land resources, or whether changes in grazing management for the allotments are necessary. This EA is intended to evaluate the findings of the S&G evaluations as they relate to vegetation conditions and resource values in the allotments. This is done in an effort to balance demands placed on the resources by various authorized uses within the allotments. It was determined by the Interdisciplinary Assessment Team (IAT), during the assessment process, that resource conditions on the Horse Mountain Allotment are either meeting Standards or making significant progress toward meeting the applicable Standards for Rangeland Health. This EA is intended to be used with the Horse Mountain Allotment Evaluation & Rangeland Health Analysis (Appendix 1).

1.1 Background

The BLM is proposing to fully process the term grazing permit on the Horse Mountain Allotment in accordance with all applicable laws, regulations, and policies. Because Grazing Permit No. 45240 expired on February 28, 2005, the BLM renewed the permit with the same terms and conditions pursuant to Section 416 of Public Law 111-88, pending compliance with applicable laws and regulations. Compliance with all applicable laws and regulations includes consultation, coordination and cooperation with affected individuals, interested publics, States, and Indian Tribes; completion of the applicable level of National Environmental Policy Act (NEPA) review; consultation with the United States Fish and Wildlife Service (USFWS) under Section 7 of the Endangered Species Act; and ensuring that allotments are achieving or making significant progress toward achievement of land health standards. A land health evaluation was completed in 2009 and it was determined that, while standards one (upland sites) and portions of three (desired resource conditions for uplands) were being met, standard two (riparian wetland sites) and portions of standard three (desired resource conditions for riparian areas) was not being met.

On September 11, 2012, a proposed decision to renew the Horse Mountain permit based on a Documentation of NEPA Adequacy was protested. As a result of that protest, additional review of the proposed management was completed and subsequent inventory of springs and waters has led to a modification of the original proposal which is presented below.

1.2 Purpose and Need

The purpose of this action is to provide for livestock grazing opportunities on public lands where consistent with meeting management objectives, including the Arizona Standards for Rangeland Health and Guidelines for Livestock Grazing Management.

The need for this action is established by the Taylor Grazing Act (TGA), the Federal Land Policy and Management Act (FLPMA), and the Upper Gila-San Simon Grazing Environmental Impact Statement (BLM 1978) decisions were carried forward into the Safford Resource Management Plan (RMP) (1991) and the Statewide Land Use Plan Amendment for Implementation of Arizona Standards for Rangeland Health and Guidelines for Grazing Administration (1997) which require that the BLM respond to applications to fully process and renew permits to graze livestock on public land. In detail, the analysis of the actions identified in the applications for grazing permit renewals and the alternative actions is needed because:

- BLM Arizona adopted the Arizona Standards for Rangeland Health (Land Health Standards) and Guidelines for Livestock Grazing Management in all Land Use Plans (Arizona S&Gs) in 1997 (Appendix A). Land Health Standards and Guidelines for Grazing Administration was also amended into the Safford RMP. Land Health Standards for Rangelands should be achieving or making significant progress towards achieving the standards and to provide for proper nutrient cycling, hydrologic cycling, and energy flow. Guidelines direct the selection of grazing management practices and, where appropriate, livestock facilities to promote significant progress toward, or the attainment and maintenance of, the standards. This EA is intended to be used with the Horse Mountain Allotment Evaluation & Rangeland Health Analysis.

- The SFO RMP identifies resource management objectives and management actions that establish guidance for managing a broad spectrum of land uses and allocations for public lands in the Safford Field Office. The SFO RMP allocated public lands within the Horse Mountain Allotment, as available for domestic livestock grazing. Where consistent with the goals and objectives of the RMP and Land Health Standards, allocation of forage for livestock use and the issuance of grazing permits to qualified applicants are provided for by the Taylor Grazing Act (TGA) and the Federal Land Policy and Management Act (FLPMA).

1.3 Decision to be Made

The Safford Field Manager is the authorized officer responsible for the decisions regarding management of public lands within this allotment. Based on the results of the NEPA analysis, the authorized officer will issue a determination of the significance of the environmental effects and whether an environmental impact statement (EIS) would be required. If the authorized officer determines that it is not necessary to prepare an EIS, the EA will provide information for the authorized officer to make an informed decision whether to renew, renew with modifications, or not renew the permit and if renewed, which management actions, mitigation measures, and monitoring requirements will be prescribed for the Horse Mountain Allotment to ensure management objectives and Arizona Standards for Rangeland Health are achieved.

1.4 Conformance with Land Use Plan

The proposed action is in conformance with the Safford Resource Management Plan (RMP) (1991) and the Statewide Land Use Plan Amendment for Implementation of Arizona Standards

for Rangeland Health and Guidelines for Grazing Administration 1997. Arizona's Standards and Guides were developed through a collaborative process involving the Arizona Resource Advisory Council and the Bureau of Land Management State Standards and Guidelines team. The Secretary of the Interior approved the Standards and Guidelines in April 1997. The Decision Record, signed by the BLM Arizona State Director (April 1997) provided for full implementation of the Standards and Guides in all Arizona BLM Land Use Plans.

Implementation level decisions from the Upper Gila-San Simon Grazing Environmental Impact Statement (UG-EIS) (BLM 1978) were carried forward into the RMP. Through the above authorizing documents, BLM will continue to issue grazing permits and licenses, implement, monitor and modify allotment management plans and increase or decrease grazing authorizations as determined through the allotment evaluation processes. As necessary, National Environmental Policy Act compliance documents will be prepared prior to any action being implemented. The grazing decisions are incorporated into this Resource Management Plan/Environmental Impact Statement by reference and are common to all alternatives. Management direction pertaining to grazing for this allotment can be found in the Upper Gila-San Simon Grazing Environmental Impact Statement (BLM 1978), Appendix C, p. A-27. All other discipline management objectives pertaining to this allotment can be found in the RMP.

1.4.1 RMP Decision Number and Narrative

CL19 Cultural resources stipulations will be included on all grazing leases and permits. UG-EIS page 4-2

GM12 The general objective of the proposed action is to permit livestock to use the harvestable surplus of palatable vegetation–a renewable resource–and thereby produce a usable food product. The proposed livestock management program is based on the multiple-use management concept, which provides for the demands of various resource uses and minimizes the conflicts among those uses or activities. Although the various uses of the rangeland resources can be compatible, competition among uses requires constraints and mitigating measures to realize multiple-use resource management goals. The Specific objectives for each grazing unit are shown in appendix C. UG-EIS Page 1-6

GM17 Deviation from the management system could be allowed for circumstances beyond the licensee's control, such as severe drought, but such deviations would require the District Manager's prior authorization UG-EIS Pages 1-8.

GM32 Proper stocking is an essential principle of range management, which should precede or coincide with the initiation of any grazing management system. With stocking rates in balance with the proposed grazing capacities, utilization of key forage species in the key areas would average about 40 percent over a period of years. At a given stocking rate during years of high forage production (e.g. above normal rainfall) utilization in the use pasture might be as low as 20 percent. During years of low forage production utilization could be as high as 60 percent. UG-EIS Page 1-9

VM02 Upland vegetation on public lands within the Safford District will be managed for watershed protection, livestock use, reduction of non-point source pollution, Threatened and Endangered species protection, priority wildlife habitat, firewood and other incidental human uses. Best management practices and vegetation manipulation will be used to achieve desired plant community management objectives. Treatments may include various mechanical, chemical and prescribed fire methods. RMP page 24 & 45. UG-EIS Partial ROD I page 10.

VM03 Ecological Site Inventories will be combined with the desired plant community concept to develop management objectives for activity plans as they are written or revised. RMP page 45.

VM04 Public lands will be managed to preserve and enhance the occurrences of special status species and to achieve the eventual delisting of threatened and endangered species. RMP page 45.

VM07 Land treatments (vegetation manipulation) will be used to decrease invading woody plants and increase grasses and forbs for; wildlife and livestock forage and watershed condition. Treatment areas will be identified in activity plans. Treatments may include various artificial (mechanical, chemical, or prescribed fire) methods. RMP page 45.

WF02 District management will focus on priority species and their associated habitats to maintain or enhance population levels. Threatened and endangered, proposed, candidate, State-listed and other special status species will be managed to enhance or maintain district population levels or in accordance with established inter/intra-agency management plans. District management efforts will be directed towards the enhancement of biological diversity. UG-EIS ROD Part I page 6.

WF14 Manage habitat for optimum wildlife populations, based on ecological conditions, taking into consideration local, yearly climatic variations. BLM will follow Arizona Game and Fish Department's five-year strategic plans for the various species and will assist the Department in accomplishing its goals for the various species. RMP page 34.

1/ RMP - Safford District Resource Management Plan
2/ UG-EIS - Upper Gila - San Simon Grazing Environmental Statement

1.5 Relationship to Other Plans, Statutes, and Regulations

Grazing permit renewals are provided for in 43 CFR 4100 where the objectives of the regulations are "....to promote healthy, sustainable rangeland ecosystems; to accelerate restoration and improvement of public rangelands to properly functioning conditions; to promote the orderly use, improvement and development of the public lands; to establish efficient and effective administration of grazing of public rangelands; and to provide for the sustainability of the western livestock industry and communities that are dependent upon productive, healthy public

rangelands" (43 CFR 4100.0-2). The proposed action would comply with 43 CFR 4100.0-8 which states, in part, "The authorized officer shall manage livestock grazing on public lands under the principle of multiple use and sustained yield, and in accordance with applicable land use plans." The proposed action also complies with 43 CFR 4130.2(a) which states, in part, "Grazing permits or leases shall be issued to qualified applicants to authorize use on the public lands and other lands under the administration of the Bureau of Land Management that are designated as available for livestock grazing through land use plans". The proposed action is consistent with the Fundamentals of Rangeland Health (43 CFR 4180.1) and Arizona's Standards and Guidelines, which were developed through a collaborative process involving the Arizona Resource Advisory Council and the BLM State Standards and Guidelines team. The Secretary of the Interior approved the Standards and Guidelines in April 1997. These standards and guidelines address watersheds, ecological condition, water quality, and habitat for special status species. These resources are addressed later in this document. The proposed action conforms to the President's National Energy Policy and would not have adverse energy impacts. The proposed action would not deny energy projects, withdraw lands, close roads, or in any other way deny or limit access to mineral materials to support energy actions. The regulations at 43 CFR Part 10 specifically require land use authorizations, including leases and permits, to include a requirement for the holder of the authorization to notify the appropriate Federal official immediately upon the discovery of human remains and other items covered by the Native American Graves Protection and Repatriation Act (see 43 CFR 10.4(g); the actual requirement for persons to notify the Federal agency official and protect the discovery is in 43 CFR 10.4(b) and (c). Executive Order 13186 requires the BLM and other Federal agencies to work with the USFWS to provide protection for migratory birds. Implementation of the proposed action is not likely to adversely affect any species of migratory bird known or suspected to occur on the allotments.

The proposed action would comply with the following laws and/or agency regulations, and are consistent with applicable Federal, state and local laws, regulations, and plans to the maximum extent possible.

- Taylor Grazing Act (TGA) of 1934
- Federal Land Policy and Management Act (FLPMA) of 1976 (43 U.S.C. 1701 et seq.)
- Public Rangelands Improvement Act (PRIA) of 1978
- Endangered Species Act (ESA) of 1973, as amended
- 43 CFR 4100 Grazing Administration - Exclusive of Alaska
- Arizona Water Quality Standards, Revised Statute Title 49, Chapter II
- Section 106 of the National Historic Preservation Act of 1966, as amended
- Native American Graves Protection and Repatriation Act of 1990 (25 U.S.C. 3001-3013; 104 Stat. 3048-3058)
- National Environmental Policy Act (NEPA) of 1969
- Executive Order 13186 – Responsibilities of Federal Agencies to Protect Migratory Birds

1.6 Scoping

Scope of Issues: The CEQ defines scoping as "…an early and open process for determining the scope of issues to be addressed and for identifying significant issues related to a proposed action" (40 CFR 1501.7). Scoping is an important underpinning of the NEPA process that encourages public input and helps focus the environmental impact analysis on relevant issues. Distribution of scoping information typically heralds the beginning of the public component of the NEPA process. To encourage public participation, BLM mailed scoping information regarding the proposal to interested individuals, organizations, and agencies on June 12, 2012. BLM received one letter of comment during the scoping period.

Key Issues: Several environmental issues concerning the proposed project were identified by the NEPA interdisciplinary team members and from the public comments during scoping.

1.6.1 Issues Identified

- Is there potential to introduce or spread invasive and non-native species?
- Are there impacts to soils from livestock grazing?
- What are the effects of grazing on springs?
- What actions are needed to improve water quality and progress towards Proper Functioning Condition (Standard 2) in Deer Creek?
- Are there impacts to wildlife and/or special status species?

2.0 Proposed Action and Alternatives

2.1.1 Design Features Common to Proposed Action and No Action Alternative

Annual Meetings: When large changes are identified in monitoring data, an annual meeting between BLM and the grazing permittee would be conducted to discuss previous years monitoring and the coming year's grazing schedule. Emergency situations would be handled on a case by case basis and would involve consultation with the above parties. The final decisions concerning the annual meeting recommendations and moves outside the scheduled use periods would be made by the authorized officer.

Flexibility: When drought is declared by the authorized officer, permittees are contacted and educated on consequences of drought on forage production. The pemittee is also reminded of the upper limit of utilization. Permittees are: 1.) encouraged to voluntarily reduce numbers 2.) if drought continues, permittees can be required to remove all cattle under a voluntary agreement or full force and effect decision

2.2 Proposed Action: Issue Modified Grazing Permit

Under the proposed action, the Authorized Officer would authorize continued livestock grazing under the same mandatory terms and conditions as the current permit. However, unnamed

spring and Horse Spring would be fenced to exclude livestock. In addition, existing range projects would be assessed and refurbished, if practical. Fencing of the two springs would not affect number of AUMs being permitted for the Horse Mountain Allotment. A grazing rotation, detailed in the Grazing Plan section below, would be implemented. The permit would be renewed for a term of ten years. Should information collected subsequent to any renewal indicate changes in management are needed to ensure that the allotment is meeting or making significant progress towards standards and conforming to guidelines, the permit may be modified at any time during the ten-year period.

Authorized use would remain at 312 AUMS.

Grazing Plan:
March 1 through February 28.
Beginning on November 16, 2013, the Horse Mountain and Catchment pastures would be rotated between with seasons of use between May 15 through November 15 and November 16 through May 14. The allotment would be rested between rotations to provide rest for warm and cool season species and riparian vegetation (Table 1).

Table 1. Horse Mountain Grazing Rotation

	15-May	Jun	Jul	Aug	Sep	Oct	15-Nov	16-Nov	Dec	Jan	Feb	Mar	Apr	14-May
2013	Allotment Rested							Horse Mtn Pasture						
2014	Catchment Pasture							Allotment Rested						
2015	Horse Mtn Pasture							Catchment Pasture						
2016	Allotment Rested							Horse Mtn Pasture						
2017	Catchment Pasture							Allotment Rested						
2018	Horse Mtn Pasture							Catchment Pasture						
2019	Allotment Rested							Horse Mtn Pasture						
2020	Catchment Pasture							Allotment Rested						
2021	Horse Mtn Pasture							Catchment Pasture						
2022	Allotment Rested							Horse Mtn Pasture						
2023	Catchment Pasture							Allotment Rested						

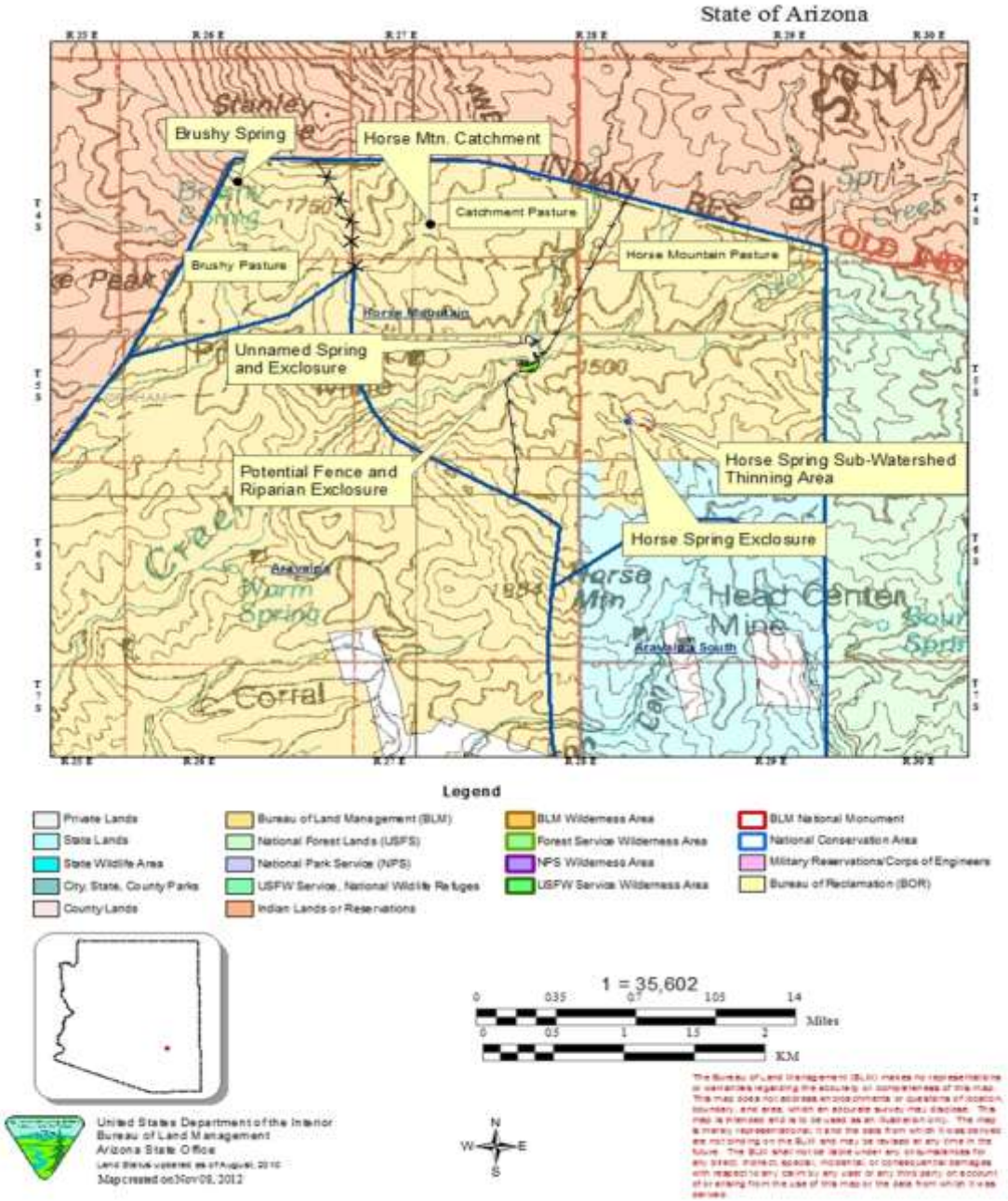
Projects: A fence would be constructed around unnamed spring (Approximately 750' perimeter encompassing 0.9 acres), and Horse Spring (approximately 210' perimeter encompassing 0.13 acres) to provide protection from livestock grazing and loafing. Figure 2 shows locations of the two fencing projects and existing range projects. Fencing specifications will be consistent with Arizona Game and Fish Department and BLM standards for wildlife. Each exclosure would have a locked gate which may be opened to allow egress of livestock in the event of their unauthorized entry into the exclosure. Unnamed spring would receive a spring box which would overflow to maintain hydric soils around the spring. Unnamed spring would be monitored to ensure that there is adequate water to maintain hydric soils at the spring box. If flows drop below these levels the existing pipeline to the livestock trough would be shut off.

The 5.5 acre sub-watershed above Horse Spring would be thinned (by selectively cutting chaparral vegetation with hand tools). Cuttings would be scattered on areas of bare ground. Currently there is no surface water at Horse Spring. If flows return an additional future analysis may be completed to determine if there is sufficient water to pipe outside of the exclosure.

The proposed grazing rotation with the included periods of rest in Table 2 should allow for recruitment and retention of warm and cool season grasses as well as riparian plant communities. If, after three years when PFC is conducted, there is no improvement to the riparian habitat, an additional 190' fence would be built between the Horse Mountain corrals and pasture fence. This would create a 1.4 acre exclosure along Deer Creek which is believed to encompass the area of Deer Spring. The effectiveness of this exclosure and vegetation response would be monitored (PFC conducted at three and five years) and assessed for its effectiveness and management implications.

See Figure 1 for a map of project locations on the Horse Mountain Allotment.

Figure 1. Map of Existing and Proposed Projects on the Horse Mountain Allotment.



Mandatory Terms and Conditions: Under the Proposed Action, the Authorized Officer would authorize continued livestock grazing under the same mandatory terms and conditions as the current permit (Table 2).

Table 2. Mandatory terms and conditions for the Horse Mountain Allotment.

Allotment	Livestock number	Kind	Grazing Period Begin	Grazing Period End	Type %PL	Use	AUMS
45240	26	Cattle/Horse	03/01	02/28	100	Active	312

As a term and condition of this permit, you are required to do the following:

1. Submit a report of your actual use made on the allotment for the previous grazing period March 1 to February 28. Failure to submit such a report by March 15 of the year may result in suspension or cancellation of your grazing permit or lease.
2. This permit is subject to future modification as necessary to achieve compliance with the standards and guidelines (43 CFR 4180).
3. Permittees are required to maintain all range projects for which they have maintenance responsibilities.
4. With the exceptions of salt and or mineral blocks, supplemental feeding is not authorized on public lands unless prior approval is requested and given by the authorized officer.
5. Salt and/or mineral blocks shall not be placed within one quarter (1/4) mile of water sources, springs, streams, and riparian habitats.
6. All troughs would be outfitted with wildlife escape structures to provide a means of escape for animals that fall in while attempting to drink or bathe.
7. Livestock would be excluded from unnamed spring and Horse Spring.
8. This permit is subject to all terms and conditions found on the back side of this permit.
9. If in connection with allotment operations under this authorization, any human remains, funerary objects, sacred objects or objects of cultural patrimony as defined in the Native American Graves Protection and Repatriation Act (P.L. 101-601; 104 Stat. 3048; 25 U.S.C. 3001) are discovered, the permittee shall stop operations in the immediate area of the discovery, protect the remains and objects, and immediately notify the Authorized Officer of the discovery. The permittee shall continue to protect the immediate area of the discovery until notified by the Authorized Officer that operations may resume.

The BLM would do the following:

- Construct a fence around the unnamed spring and Horse Spring to provide protection from livestock grazing and loafing.
- If, after three years and the completion of a Proper Functioning Condition assessment of the Deer Creek riparian area, the grazing rotation and rest are not enough to improve riparian conditions through recruitment and establishment of riparian vegetation, a 1.4 acre exclosure would be created on Deer Creek by connecting the pasture fence and corral fence across the creek.

2.3 No Action Alternative

Under the No Action Alternative, the Authorized Officer would authorize continued livestock grazing under the same mandatory terms and conditions as the current permit. However, no range projects would be installed. The permit would be renewed for a term of ten years. Should information collected subsequent to any renewal indicate changes in management are needed to ensure that the allotment is meeting or making significant progress towards standards and conforming to guidelines, the permit may be modified at any time during the ten-year period. No authorized use change, grazing plan or projects would take place.

Under the No Action Alternative, the Field Manager would authorize continued livestock grazing under the same mandatory terms and conditions as the current permit (Table 3).

Table 3. Mandatory terms and conditions for the Horse Mountain Allotment.

Allotment	Livestock number	Kind	Grazing Period Begin	Grazing Period End	Type %PL	Use	AUMS
45240	26	Cattle/Horse	03/01	02/28	100	Active	312

Other terms and conditions:

All other terms and conditions would remain the same as in the current permit.

2.4 No Grazing Alternative

Under the No Grazing Alternative, livestock grazing would be eliminated as an authorized activity. This alternative would cancel the permit on the Horse Mountain Allotment. Under this alternative, BLM would initiate the process in accordance with the 43 CFR parts 4100 and 1600 to eliminate grazing on the allotment and amend the resource management plan.

2.5 Alternatives Considered but Eliminated From Detailed Analysis

An alternative to fence off the riparian area of Deer Creek was considered, but eliminated from detailed analysis due to the fact it would not addressing the resource management objectives of the RMP mentioned in the purpose and need and impracticability. This alternative would effectively eliminate grazing on the southern half of the allotment, where there are currently no water sources. This fencing, due to the topography of the area, would create a relatively close double fence which could reduce wildlife movement across the Horse Mountain allotment. Further, due to the flooding and number of side canyons entering Deer Creek, maintenance would be impractical. Therefore, this alternative was not considered in detailed analysis within this document.

No other alternatives were identified during scoping that would respond to the purpose and need and could be practically implemented on the Horse Mountain allotment.

3.0 Affected Environment

The Horse Mountain Allotment is located in the western part of Graham County. It is about ten miles northeast of Klondyke, Arizona and is bounded on the north by the San Carlos Apache Indian Reservation. Access by road is either by Klondyke or by the Bylas-Coolidge Dam Road. The allotment was reduced by half in 1969 by the Secretary's Order to restore Indian ceded lands to the San Carlos Apache Indian Tribe. In 1980, the allotment was joined by what was left of the Stanley Butte Allotment, which was also reduced by the Secretary's Order. Lands within the allotment consist of 2,328 acres of Bureau of Land Management managed lands and 160 acres of State lands.

The elevation varies from almost 6,180 feet at the top of Horse Mountain on the eastern boundary to about 3,700 feet in Arizona Gulch on the south boundary. The topography is moderately rough with some steep mountainous terrain. The elevation decreases to the south as the drainages make their way to Aravaipa Creek.

The southern end of the allotment is characterized by north facing chaparral covered steep slopes which grade down to Deer Creek. Species present include: shrub live oak, sugar sumac, white-thorn acacia, juniper, and mesquite. North of Deer Creek the aspect changes along with the soils, creating a diverse plant community composed of a mixture of perennial grasses, suffrutescent forbs, shrubs, succulents and desert trees. Native annual forbs and grasses, of both the winter and summer seasons, exist in the plant community. Periodic, naturally occurring, wildfires are important in maintaining the potential plant community. North facing slopes in this portion of the allotment have a higher percentage of mid-grasses and some cool season grasses that may not occur on south facing slopes.

The BLM is required to consider many authorities when evaluating a Federal action. Those elements of the human environment that are subject to the requirements specified in statutes, regulations, or executive orders, and must be considered in all EAs, have been considered by BLM resource specialists to determine whether they would be potentially affected by the proposed action. These elements are identified in Table 4, along with the rationale for the determination on potential effects. If any element was determined to be potentially impacted, it was carried forward for detailed analysis in this EA; if an element is not present or would not be affected, it was not carried forward for analysis. Table 4 also contains other resources/concerns that have been considered in this EA. As with the elements of the human environment, if these resources were determined to be potentially affected, they were carried forward for detailed analysis in this document. See Figure 2 for location and land ownership.

Figure 2: Horse Mountain Allotment

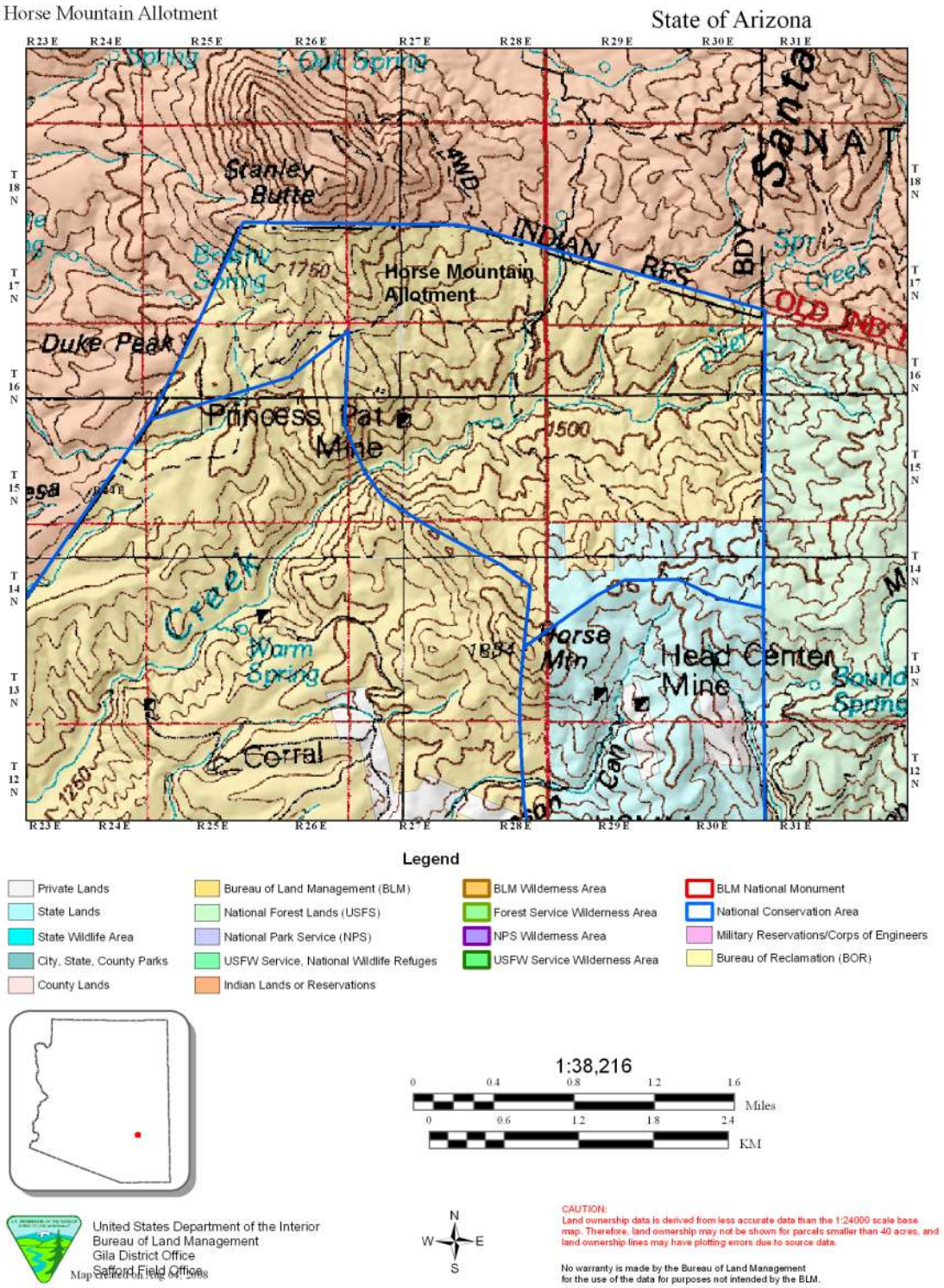


Table 4. Summary evaluation of elements/resources of the human environment.

Resource	Determination*	Affected Environment (Rationale for Determination)
* NP = Not present in the area that will be impacted by the proposed action. NI = Present, but not affected to a degree that would mean detailed analysis is required. PI = Present with potential for impact; analyzed in detail in the EA.		
Air Quality	NI	Highly localized and minor effects resulting from fugitive dust, equipment operation, and engine emissions are anticipated during routine operation, maintenance activities, and installation and repair of proposed projects. No long-term adverse effects are expected and would not result in the production of emission or particulate matter above incidental levels. Local sources of air pollutants include traffic on unpaved roads and natural events such as windstorms. Increased vegetation cover, resulting from the two small fencing projects would generally improve air quality by holding soils in place and retaining sediment, but effects would be immeasurable.
Areas of Critical Environmental Concern	NP	The project area is not located within or near an Area of Critical Environmental Concern.
Cultural Resources	NI	A Class I and III cultural inventory of the project area was completed. No cultural resources were identified within the project area. Allotment case files, AMP files, range project files, Water Source Inventory files, and Cultural Resource files were reviewed.
Environmental Justice	NP	The project area encompasses uninhabited public lands administered by BLM. The closest community is Klondyke Arizona ten miles to the south. No aspect of the Proposed Action, No Action, or No Grazing Alternatives would have a disproportionately high adverse health or other environmental impact on low income or minority populations as defined by Executive Order 12898.
Farmlands (Prime or Unique)	NP	There are no prime or unique farmlands within or near the project area, therefore there would be no direct, indirect, or cumulative impacts to this critical element.
Floodplains	NP	The proposed action area is not within a floodplain as defined by the Executive Order 11988 (1977).
Invasive and Nonnative Species	PI	Seeds of undesirable species may be dispersed through a variety of vectors including wind, water, livestock, wildlife, or humans entering the allotment. Disturbed areas are more susceptible to invasive species than intact native plant communities. Nonnative and invasive red brome and tamarisk occur on the allotment. This issue is therefore analyzed in detail.
National Energy Policy	NI	The proposed and alternative actions would not impact the National Energy Policy Act of 2005, in that implementation does not impinge on any future and potential energy projects. Therefore there would be no direct, indirect, or cumulative impacts to this critical element.
Native American Religious Concerns	NP	During consultations with American Indian Tribes who claim cultural affiliation to southern Arizona, no Native American religious concerns have been identified in relation to actions proposed in this EA.
Socioeconomic Values	NI	The closest community to the project area is Klondyke Arizona ten miles to the south. The social and economic base for the community is ranching and recreation. The Horse Mountain Allotment and the associated 26 head of cattle contribute in an extremely small amount to the socioeconomics of the local community. The impact contrast of the No Grazing Alternative (removal of 26 head of cattle from local economic production) with the Proposed Action and No Action Alternatives (26 head of cattle remain part of the local economic production) is so small that it is not discernible.
Soils	PI	Soils are affected by disturbance from grazing activities, lack of vegetative cover and erosion. This issue is therefore analyzed in detail.

Resource	Determination*	Affected Environment (Rationale for Determination)
Threatened, Endangered, or Candidate plant species	NP	No Threatened, Endangered, or Candidate plant species occur in the project area.
Threatened, Endangered Animal Species	NI	The Safford Field Office implements its grazing program consistent with the Biological Opinion (BO) rendered on the Gila District Livestock Grazing Program for the Safford/Tucson Field Offices' Livestock Grazing Program, Southeastern Arizona (22410-2006-F-0414). This BO was reviewed to insure that all mitigation measures and stated in the BO are being followed. Ocelot is the only threatened or endangered species with the potential to occur on the Horse Mountain Allotment, it was determined in the BO that grazing was not likely to adversely affect ocelot.
T&E Fish/Fisheries	NP	Neither the proposed action or the alternatives would adversely affect threatened, endangered, or sensitive fish species (TES) or their proposed or designated critical habitat due to no TES fish species or their habitat occurring within or adjacent to the allotment.
Visual Resources Management	NI	There would be greater impacts to visual resources in the Proposed Action than the other two alternatives due to the proposed installation of fencing around unnamed and Horse springs, and potentially the Deer Creek exclosure fence. These features would be visible from close range, but would fit within the VRM objectives set for this area.
Wastes (hazardous or solid)	NP	There are no hazardous or solid wastes within the project area and no direct, indirect, or cumulative impacts on this critical element would occur.
Water Quality and Quantity (drinking/ground)	PI	Deer Creek is not meeting proper functioning conditions, including areas of erosion and incision which are introducing excess sediment and reducing water storage capacity within the Deer Creek drainage.
Wetlands/Riparian Zones	PI	Not meeting proper functioning conditions. This issue is therefore analyzed in detail.
Wild and Scenic Rivers	NP	There are no wild and scenic rivers within the project area and no direct, indirect, or cumulative impacts on this critical element would occur.
Wilderness	NP	The nearest wilderness (Santa Teresa) is located approximately 2.2 miles south east of the project area. Because there are no designated wilderness areas within the action area of the project, no direct, indirect, or cumulative impacts on this critical element would occur from the proposed action or no action alternative.
Wilderness Characteristics	NP	The area analyzed within the Horse Mountain allotment does not meet the size criteria for wilderness characteristics. Due to not meeting the size criteria, no direct, indirect, or cumulative impacts would occur to wilderness characteristics from the proposed action.
Wildlife and Special Status Species	PI	Disturbances to wildlife would occur during installation of fences. Sensitive plant species may be affected by grazing. There is a lack of cover for lowland leopard frogs. This issue is therefore analyzed in detail.

3.1 Resources Brought Forward for Analysis

3.1.1 Invasive and Nonnative Species

Two Federal laws direct invasive and nonnative species control on Federal lands. The Federal Noxious Weed Act of 1974 (7 U.S.C. 2801-2813), as amended by Section 15, Management of Undesirable Plants on Federal Lands, 1990, and the Carlson-Foley Act of 1968 (P.L. 90-583). In addition, under Executive Order 13112, dated February 3, 1999, states: "projects which occur on Federal land or receive Federal funding must use relevant programs and authorities to: (1)

prevent the introduction of invasive plant species, (2) detect and respond rapidly to and control populations of such species in a cost-effective and environmentally sound manner, (3) monitor invasive plant species populations accurately and reliably, and (4) provide for restoration of native plant species and habitat conditions in ecosystems that have been invaded." Noxious weeds are species of invasive plants identified by governmental agencies as exerting substantial negative environmental or economic impact. The term "noxious weed" is a legal classification, not an ecological term. Infestations of noxious weeds are most likely to occur in disturbed areas such as construction sites, road shoulders, and fallow agricultural fields.

The project area is located in the Southeastern Arizona Cooperative Weed Management Area. Currently, there are no known noxious weeds on the Horse Mountain Allotment; seeds of these undesirable species may be dispersed through a variety of vectors including wind, water, animals, or humans entering the allotment. Disturbed areas are more susceptible to invasive species than intact native plant communities.

3.1.2 Soils

A complete soil survey of the area has not been conducted and ecological site descriptions and reference sheets have not been developed for all of the ecological sites found within the Horse Mountain allotment. Although the soil survey has not been completed, ecological sites can determined based on soil characteristics and vegetation present. Soils data is also available from a soil survey conducted directly north of the allotment on the San Carlos Indian Reservation. The Horse Mountain allotment falls within Major Land Resource Area 38-1 (precipitation average of 15.27 inches per year) and is composed of Clay Loam Upland, Clayey Hills, Volcanic Hills-Clayey, and Granitic Hills Ecological Sites.

3.1.3 Water Quality (Ground and Surface)

The Safe Drinking Water Act of 1974, amended in 1986 and 1996 regulates public drinking water in the United States. The Clean Water Act (CWA) of 1977 establishes the basic structure for regulating discharges of pollutants into the waters of the United States and regulating quality standards for surface waters.

Past grazing activity on the Horse Mountain Allotment has affected the springs and creeks by reducing the density and quality of vegetation. Loss of vegetation may increase soil compaction and increase runoff, which leads to increased soil sedimentation in streams. Horse Spring currently is not flowing and has no functional infrastructure to divert water if there. It is unknown if the lack of water is due to recent drought, long term or geologic changes, or other causes. Currently livestock, authorized and unauthorized, congregate within the riparian areas for the majority of the year.

3.1.4 Wetlands/Riparian Zones

Executive Order 11990 (Wetlands) - This Order directs Federal agencies in carrying out their land management responsibilities, to take action that will minimize the destruction, loss, or degradation of wetlands, and take action to preserve and enhance the natural and beneficial values of wetlands.

A riparian assessment was completed on June 23, 2011, and the riparian area along Deer Creek was determined to be functional-at-risk, without an apparent trend. The section of Deer Creek evaluated (approximately 1.5 miles) is a relatively steep, valley-bottom constrained system with occasional bedrock constraints. The riparian width is limited due to the narrow valley bottom, but potential extent (within valley bottom) has not been achieved. There is a diverse age-class and composition of riparian-wetland vegetation, which indicate maintenance of riparian-wetland conditions. Streambank vegetation able to protect banks and dissipate energy during high flows is lacking in areas (some areas are dominated by Bermuda grass (*Cynodon dactylon*), lacking vegetation, or showing signs of grazing, trampling, and bank instability. Lateral and vertical channel movement are constrained by valley features and bedrock and has sufficient large/course material to dissipate energy during flow events.

During the assessment a species list was developed of those species either in Deer Creek or along the streambanks and included the following: Arizona walnut (*Juglans major*), Arizona sycamore (*Platanus wrightii*), Fremont cottonwood (*Populus fremontii*), Seep willow (*Baccharis spp.*), salt cedar (*Tamarix spp*.), Pointleaf manzanita (*Arctostaphylos pungens*), canyon grape (Vitis arizonica), snakeweed (*Gutierrezia sarothrae*), cholla (*Opuntia spp*.), Bermuda grass, one-seed juniper (*Juniperus monosperma*), alligator juniper (*Juniperus deppeana*), beargrass (*Nolina microcarpa*), Arizona white oak (*Quercus arizonica*), and unidentified sedges. During the assessment it was noted that the sapling sycamores and sedges are being grazed and trampled throughout the area assessed.

3.1.5 Wildlife and Special Status Species

The Safford District Resource Management Plan identified six objectives for BLM priority wildlife species:

- Maintain and enhance priority species and their habitats.
- Focus management actions on a single species, only when required by the Endangered Species Act. Actively promote Threatened and Endangered species recovery to achieve eventual delisting.
- Conserve candidate species to ensure that BLM authorized actions do not contribute to the need to list any species as threatened or endangered.
- Manage state-listed species to meet state objectives. Other special status species will be managed in accordance with inter and intra-agency management plans.
- Manage priority wildlife species habitat (vegetation communities) or special features of that habitat (water, riparian vegetation, cliffs, etc.) to maintain or enhance population levels.
- Focus management efforts on enhancing biological diversity.

Priority species occurring on the Horse Mountain allotment include mule deer, turkey, black bear, javelina, quail, and desert bighorn sheep.

A query of the Arizona Game and Fish Department Heritage Data Management System produced a list of special status species found within five miles of the Horse Mountain Allotment (Table 5).

Table 5. Special Status Species Occurrences and Critical Habitat within five miles of Horse Mountain Allotment

SCIENTIFIC NAME	COMMON NAME	FWS	BLM	STATE
Strix occidentalis lucida	Designated Critical Habitat for Mexican spotted owl			
Eriogonum capillare	San Carlos Wild-buckwheat	SC		SR
Lithobates yavapaiensis	Lowland leopard Frog	SC	S	WSC
Penstemon discolor	Cataiina Beardtongue			HS

FWS = U.S. Fish and Wildlife Service
BLM = Bureau of Land Management
C = Candidate
T = Threatened
SC = Species of Concern
E = Endangered
S = Sensitive
SR = State Restricted
WSC = Wildlife Species of Concern
HS = Highly Safeguarded

The Safford Field Office implements its grazing program consistent with the Biological Opinion (BO) rendered on the Gila District Livestock Grazing Program for the Safford/Tucson Field Offices' Livestock Grazing Program, Southeastern Arizona (22410-2006-F-0414). This BO was reviewed to insure that all mitigation measures stated in the BO are being followed.

Critical Habitat for Mexican spotted owl is located on US Forest Service lands within the Santa Teresa Mountains, on the eastern edge of the Horse Mountain Allotment. There is no designated Critical Habitat on the Horse Mountain Allotment. Surveys for Mexican spotted owls within the Santa Teresa Mountains have yet to document the presence of owls (A. Casey, pers. comm.). San Carlos wild-buckwheat may be found in sandy, ephemeral washes and may be within the Horse Mountain allotment. A search of botanical databases (SeinNet) does not show any records of San Carlos wild-buckwheat being collected within the allotment boundaries, but this may be a reflection of collecting activity, rather than presence or absence of the species. Management factors identified as making this species vulnerable, within its limited range, are historic over-grazing and OHV's (Arizona Game and Fish Department Heritage Database Management System).

Lowland leopard frogs require perennial water. The Horse Mountain Allotment supports at least one masonry dam with a tank and springs, which could potentially support lowland leopard frogs. There is no record of a frog inventory having been conducted on the allotment, so it is unknown if they are present or being affected by current management practices.

Cataiina beardtongue is a perennial herbaceous shrub that grows on bare soil, cliff faces and rock outcrops in chaparral and pine-oak woodland at elevations between 4,000 and 7,600 feet. This

plant is an early colonizer, often occupying disturbed areas. The beardtongue has a global ranking of imperiled due to development and trampling (Arizona Game and Fish Department Heritage Database Management System).

Endangered status was extended to the U.S. portion of the ocelot's range with a final rule published July 21, 1982 (U.S. Fish and Wildlife Service 1982a). Critical habitat is not designated for the ocelot. Recovery for the ocelot was originally addressed in Listed Cats of Texas and Arizona Recovery Plan (with Emphasis on the Ocelot) (U.S. Fish and Wildlife Service 1990). A revised draft recovery plan was made available for public comment on August 26, 2010. The ocelot uses a wide range of habitats throughout its range in the Western Hemisphere (Tewes and Schmidly 1987). Despite this, the species does not appear to be a habitat generalist. Ocelot spatial patterns are strongly linked to dense cover or vegetation, suggesting it uses a fairly narrow range of microhabitats (Emmons 1988, Horne 1998). Many of the threats to the ocelot are common to all Latin American countries where most studies have occurred on nationally-recognized preserves. Threats generally include habitat loss, habitat fragmentation, logging, and harvest of the ocelot and its prey. Ocelot hunting varies between and within countries, and is legal in Ecuador, El Salvador, Guyana, and Peru. Ocelot populations appear to be rebounding in parts of its range, perhaps due to a decrease of hunting since the end of the 1980s. In the absence of hunting the ocelot seems tolerant of human settlement and activities if large forests and sufficient prey are available. The Arizona/Sonora ocelot subspecies (L. p. sonoriensis) occurs in southern Arizona and northwestern Mexico (Sonora and northern Sinaloa) (López-Gonzalez et al. 2003; Murray and Gardner 1997). Breeding populations occur in the States of Sonora and northern Sinaloa.

In November 2009, the first live ocelot was documented in Arizona (in Cochise County) with the use of camera traps. Additionally, in April 2010, an ocelot was found dead on a road near Globe, Arizona, and a genetic analysis is underway to determine the origin of this specimen, although preliminary data indicate the young male ocelot was not of captive origin. Additional sightings have been documented in southeastern Arizona in 2011 and 2012. In addition to the recent Arizona sightings, a number of ocelots have been documented just south of the U.S. border in Sonora, Mexico. Human population growth and development continue throughout the ocelot's range. Connectivity among ocelot populations or colonization of new habitats is discouraged by the proliferation of highways and increased road mortality among dispersing ocelots. Increased illegal and law enforcement actions along the U.S./Mexico international border could limit ocelot movement across the border, but it is uncertain if and how much this is affecting that movement.

Connoly (2009) recommends that habitats with more dense vegetation than surrounding areas, be considered as ocelot travel corridors between habitats. The draft Ocelot Recovery Plan (USFWS, 2010) identifies such corridors as providing 'critical landscape connectivity'.

At this time there are no known ocelots within the project area. Sightings of ocelot within southern Arizona, while increasing within the last few years, are still extremely uncommon.

4.0 Environmental Consequences

4.1 Environmental Consequences of the Proposed Action

4.1.1 Nonnative and Invasive Species

Red brome and tamarisk occur on the allotment and on neighboring allotments. Both of these species are known to increase in areas of disturbance. Moving livestock onto and off of the allotment may increase the potential of introducing noxious or invasive weeds. Livestock potentially cause soil disturbance, reduce native vegetation cover and vigor, increasing the potential for these species to establish in new areas and increase in areas where established. This potential would be reduced with the proposed rest-rotation and exclosures. There would be minor ground disturbance due to the implementation of new fence projects or from the maintenance of existing projects, which would slightly increase the potential for the establishment and/or expansion of invasive, non-native species which may be present in the area.

4.1.2 Soils

Short term impacts to soils from fence building activities would be minimal. A minor increase in soil compaction and disturbance to soil structure would result due to vehicle, equipment, and human activity during fence construction. The total area of soil compaction would be less than 0.5 acres. Soil conditions within the exclosure fence are expected to show improvement within the first year following project construction. Vegetative cover would almost immediately begin healing the bare soil areas within the area fenced.

4.1.3 Water Quality (Ground and Surface)

Exclusion of livestock from Unnamed Spring and Horse Spring would eliminate bank trampling and allow aquatic and riparian vegetation to increase in these areas. The proposed grazing rest-rotation would allow for recruitment and establishment of riparian vegetation along Deer Creek. This may result in an increase in surface water quality and quantity. Past impacts from mining and transportation activities include alteration of drainage patterns and increased sediment production.

4.1.4 Wetlands/Riparian Zones

The riparian areas of Deer Creek would improve with the proposed rest-rotation which allows for recruitment and establishment and growth of riparian vegetation. Unnamed spring would be able to establish wetland species with the exclusion of livestock.

4.1.5 Wildlife and Special Status Species

Grazing and trampling of the San Carlos wild-buckwheat and Cataiina beardtongue, by authorized livestock, may be reduced. Vegetation cover and plant diversity would likely increase in wetted areas, which have the potential to support lowland leopard frogs. This would

benefit frogs by providing cover and improved habitat. Competition between livestock and priority wildlife species for forage would be reduced. Fine fuels would increase, and if allowed to burn would provide resource benefit would improve habitat for priority wildlife species.

4.2 Environmental Consequences of No Action Alternative:

4.2.1 Nonnative and Invasive Species

The potential for introduction and spread of nonnative, invasive species would remain the same.

4.2.2 Soils

Under the No Action Alternative, soil conditions would likely continue to worsen due to little to no vegetative cover and continue livestock use. This would be most evident along the streambanks and wetted areas. Soils that are covered with vegetation or litter are better able to withstand weather events such as wind storms and runoff from precipitation events and remain intact; whereas bare soils are vulnerable to erosional events and easily transported off site and lost.

4.2.3 Water Quality (Ground and Surface)

Current conditions would continue into the foreseeable future. This includes trampled streambanks, loss of aquatic and riparian vegetation, soil erosion and sedimentation, and soil compaction.

4.2.4 Wetlands/Riparian Zones

Current conditions (areas of bank instability, trampling, and limited recruitment of riparian vegetation) would make the riparian area susceptible to increased erosion during flow events.

4.2.5 Wildlife and Special Status Species

Grazing and trampling of the San Carlos wild-buckwheat and Cataiina beardtongue (if currently within the allotment) by livestock, would continue. Current conditions, which provide limited and poor habitat for lowland leopard frogs would likely continue into the foreseeable future.

4.3 Environmental Consequences of No Grazing Alternative:

4.3.1 Nonnative and Invasive Species

The potential for introduction and spread of noxious weeds by livestock and livestock operation equipment would be eliminated. Other pathways for the introduction and spread of noxious weeds, such as wind, rain, wildlife, and recreators would remain.

4.3.2 Soils

Under the No Grazing Alternative, soils conditions are expected to show improvement overtime following livestock removal. Increased rainfall infiltration, increased soil moisture, and decreased soil compaction are expected once vegetation either establishes or increases thereby reducing amount and distribution of bare soils. These improvements would result in less soil sedimentation in streams, reduced streambank erosion, and potential of fecal/bacterial contamination of water sources.

4.3.3 Water Quality (Ground and Surface)

Riparian vegetation and buffers would increase and over-time species diversity would likely increase if a seed source is still present. Soil compaction, decreased infiltration, increased runoff, and increased soil erosion would be reduced if not eliminated. Water quality would therefore improve throughout the allotment.

4.3.4 Wetlands/Riparian Zones

The riparian area associated with the Deer Creek and Horse Spring would improve in composition and area with the elimination of livestock.

4.3.5 Wildlife and Special Status Species

Grazing and trampling of the San Carlos wild-buckwheat and Cataiina beardtongue, by authorized livestock, would be eliminated. Wetted areas, which have the potential to support lowland leopard frogs, would increase in vegetation cover and possibly extent. This would benefit frogs by providing cover and improved habitat. Competition between livestock and priority wildlife species for forage would be eliminated. Fine fuels would increase, and if allowed to burn would provide resource benefit.

4.4 Cumulative Impacts

The Council on Environmental Quality (CEQ) regulations that implement NEPA defines a cumulative impact as: "The impact on the environment which results from the incremental impact of the action when added to other past, present, or reasonably foreseeable future actions." Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time (40 CFR 1508.7).

Life of the proposed action and its alternatives is ten years; this time frame is considered to be most appropriate for considering the incremental effect of actions in the foreseeable future. Many of the past and present actions are expected to persist through this time frame, though the relative intensity of these actions could vary.

The following critical elements, ACEC's, Floodplains, Wastes, Cultural Resources, Native American Religious Concerns, Prime Farmland, VRM, Wild and Scenic Rivers, Wilderness

Characteristics, Wilderness and T&E Fish/Fisheries would have no cumulative impacts from the proposed action or alternatives as they are not found within or adjacent to the Horse Mountain allotment. Visual Resources would not be altered by the proposed action or alternatives and therefore would not add to cumulative impacts.

4.5 Past, Present and Reasonably Foreseeable Future Activities

In 1936 the first attempts were made to process application and claims for livestock use on public lands. First consideration was given to livestock operators who could show control or prior use of water necessary to support livestock grazing on public lands. In most areas, the application for livestock grazing exceeded the land's actual carrying capacity.

In 1935 and 1936 the Soil Conservation Service conducted a range survey of the public lands and presented its finding to the Safford District Advisory Board in 1937. The Advisory Board recommended carrying capacities to be set somewhat higher than range survey indicated. Vast majorities of the allotments where over stocked until the implementation of the Upper Gila-San Simon Grazing Environmental Statement. With the implementation of grazing systems and allotment management a variety of range improvement where constructed throughout the area. A numbers of range projects have been completed over time on the Horse Mountain allotment, allotment boundary fences, corrals, wells, and dirt tanks. There are no additional range projects proposed in the foreseeable future. Much of the area surrounding the Horse Mountain Allotment is San Carlos tribal lands and USFS lands within the Santa Teresa Wilderness. Both of these areas contain little development or livestock grazing infrastructure. The neighboring Aravaipa and Aravaipa South allotments have no proposals for livestock related or other development.

Historically there were several active mines on the Horse Mountain allotment. These mines supported residents in the area and contributed to a proliferation of roads for access and ground disturbing activities which contributed to excess surface runoff and erosion in areas. Currently there are no active mines on the allotment, many of the associated roads and areas are in the process of reclaiming.

There are no developed recreation facilities in the allotment; however, dispersed recreation does occur. Dispersed recreation primarily involves game hunting, target shooting and off-highway vehicle (OHV) operation. Overall, there is very little sign of recreation use or subsequent impacts. There are no recreation related concerns that would contribute to cumulative impacts. Currently public access to the allotment is limited by a locked gate on private land. If the gate were to become open to the public, recreation and related impacts would increase.

Combined, these past activities have reduced vegetative cover in areas, reduced soil stability, and contributed to areas of erosion in the uplands and Deer Creek.

Hunting, hiking, birding, and other outdoor activities would likely increase as urban areas become increasingly crowded and rural communities grow. Roads within the Deer Creek watershed would continue to contribute to erosion in the area.

There are no known actions proposed in the action area.

4.6 Cumulative Impacts of the Proposed Action and Alternatives

4.7 Proposed Action
The proposed action would decrease the impacts from grazing compared to recent and historic grazing and would increase vegetative cover and improve species composition in riparian and upland areas.

The proposed projects would not add substantially to the cumulative impacts of other past, present, or reasonably foreseeable future actions because of the limited scope of the proposal (short implementation duration and relatively small area impacted). If necessary, during project implementation, use of appropriate erosion control practices (installation of wattles) to mitigate impacts to soils would be used.

4.8 No Action Alternative
Under the no action alternative grazing would continue to negatively affect riparian vegetation. Over time, channel stability would continue to deteriorate and erosion would accelerate.

4.9 No Grazing Alternative
With the no grazing alternative plant diversity, plant cover, and production would increase over time. This would reduce erosion and runoff, increase water infiltration which would further improve riparian habitat. For species in competition with livestock, implementation of the no grazing alternative would reduce this competition.

5.0 Consultation and Coordination

5.1 Persons/Agencies Consulted:

Safford Field Office:
Archaeologist, Dan McGrew
Natural Resource Specialist, Jeff Conn
Wildlife Biologist, Tim Goodman
Recreation Planner, Deb Morris
Fisheries Biologist, Heidi Blasius
Geologist, Larry Thrasher
Realty Specialist, Roberta Lopez
Hydrologist, Chris Morris
Rangeland Management Specialist, R.J. Estes
Rangeland Management Specialist, Dave Arthun
Assistant Field Manager and NEPA Specialist, Joe David

6.0 Appendix 1: Arizona Standards and Guides Evaluation

Arizona Standards and Guidelines Evaluation
Horse Mountain #45240

1.0 Introduction

The Allotment Assessment was conducted in accordance with the direction set forth in the Washington Office Instruction Memorandum No. 98-91 and Arizona No. 99-012 for implementation of Standards for Rangeland Health and Guidelines for Grazing Administration. The purpose of the standards and guidelines is to improve the health of the public rangelands. The standards and guidelines are intended to help the Bureau, rangeland users, and others focus on a common understanding of acceptable resource conditions and work together to achieve that vision. The Decision Record for implementation of Arizona Standards for Rangeland Health and Guidelines for Grazing Administration Environmental Assessment were approved by the Arizona State Director in April 1997. This decision became effective upon approval of the Arizona standards and guidelines by the Secretary of Interior in April 1997. The Decision Record allowed for full implementation of Arizona Standards for Rangeland Health and Guidelines for Grazing Administration in all Arizona Bureau of Land Management (BLM) Land Use Plans.

Definition of Standards and Guidelines

Standards of rangeland health are expressions of levels of physical and biological condition or degree of function required for healthy, sustainable rangelands and defines minimum resource conditions that must be achieved and maintained. Determination of rangeland health is based upon conformance with the standards. Application of the standard to the range site considers the potential of the site without regard for the types or levels of use or management actions or decisions.

Guidelines, on the other hand, do consider type and level of grazing use. Guidelines for grazing management are types of methods and practices determined to be appropriate to ensure the standards can be met or that significant progress can be made toward meeting the standard. Guidelines are tools that help managers and permittees achieve standards. Guidelines are specific to livestock grazing. Guidelines are best management practices such as grazing systems which could be used to achieve rangeland health standards.

Although the process of developing standards and guidelines applies to grazing administration, present rangeland health is the result of the interaction of many factors in addition to grazing livestock. Other contributing factors may include, but are not limited to, past land uses, land use restrictions, recreation, wildlife, rights-of-way, wild horses and burros, mining, fire, weather, and insects and disease (Arizona Standards for Rangeland Health and Guidelines for Grazing

Administration, 1997).

With the commitment of BLM to ecosystem and interdisciplinary resource management, the standards for rangeland health as developed in this current process would be incorporated into management goals and objectives. The standards and guidelines for rangeland health for grazing administration, however, are not the only considerations in resolving resource issues (Arizona Standards for Rangeland Health and Guidelines for Grazing Administration, 1997).

2.0 General Description of Evaluation Area

The Horse Mountain Allotment is located in the western part of Graham County. It is about ten miles northeast of Klondyke, Arizona and is bounded on the north by the San Carlos Apache Indian Reservation (Map 1). Access by road is either by Klondyke or by the Bylas-Coolidge Dam Road. The allotment was reduced by half in 1969 by the Secretary's Order to restore Indian ceded lands to the San Carlos Apache Indian Tribe. In 1980, the allotment was joined by what was left of the Stanley Butte Allotment, which was also reduced by the Secretary's Order. Figures 1 and 2 show photographs taken of the Horse Mountain Allotment in 2009.

3.0 Grazing Use

3.1 History

The allotment is comprised mostly of public land administered by the BLM, but also contains some State lands.

The original permittee grazed both cattle and goats until the allotment was sold in 1948. Although the allotment data work sheet indicated a carrying capacity of 70 cattle yearlong (CYL) in 1948, a license for 105 CYL was granted. A range survey dating 1940-41 indicated 55 CYL.

In 1952, the allotment was sold. Since 1952, the annual license permitted nearly 105 CYL until 1968.

In 1967, the allotment was bought on the basis of a 105 CYL carrying capacity. In 1968, an application for 105 CYL for the 1968 fiscal year was made. The application was considered by the Area Manager and determined to be greater than the allotment could support yearlong. After presenting the application to the Advisory Board in April 1968, and recommending that a range survey be made to determine the carrying capacity, a license was granted for 65 cows and five horses on a regular license and 35 cattle on a temporary non-renewable license, pending the findings of a range survey.

On November 7, 1968, an Ocular Reconnaissance Range Survey was conducted. This survey indicates that the proper yearlong grazing capacity should be 35 CYL. This figure was before

the loss of the Indian Ceded Land in 1969. From 1969 to 1979, the carrying capacity for the allotment, according to the 1968 range survey, was 216 AUM's for livestock (18 CYL).

The allotment was sold in June of 1979 and again on February 1, 1980. The remainder of the Stanley Butte Allotment was purchased and both allotments, being adjacent, were combined and remained the Horse Mountain Allotment #4524. The Stanley Butte pasture had 60 AUMs (5 CYL).

The Horse Mountain Allotment Management Plan, 1980, determined a carrying capacity of 276 AUM's (23 CYL). In 1986, the permit was increased to 312 AUM's (26 CYL) with an additional Temporary Non-Renewable permit for an additional 60 AUM's (5 CYL).
The current grazing permittee has had this allotment from February 16, 2000 until present.

3.2 Current Management

The current management on the allotment is yearlong grazing on the entire allotment.

A summary of type and level of grazing use is shown in Table 1. Actual use reported is located in Table 2.

Table 1. Type and Level of Grazing Use for the Horse Mountain Allotment.

Horse Mountain Allotment No. 4524 Grazing Use Authorized	
Active Grazing Use	26 Cows/Horses Yearlong on Public Land.
Season of Use	Yearlong
Kind and Class of Livestock	Cattle/Horses
Percent Public Land	100%

Table 2. Actual Grazing Use Reported by Permittee.

Year	2011	2010	2009	2008	2007	2006	2005	2004	2003	2002	2001
AUMs	312	312	312	312	312	312	312	312	312	312	312
Year	2000	1999	1998	1997	1996	1995	1994	1993	1992	1991	1990
AUMs	0	0	0	0	0	372	372	372	372	372	368
Year	1989	1988	1987	1986	1985	1984	1983	1982	1981	1980	1979
AUMs	347	372	372	372	312	312	312	312	276	265	240

Grazing systems are discussed later in this report.

4.0 Allotment Profile

4.1 Land Status

The Horse Mountain allotment is identified as an Improve (I) category allotment. By definition, I category allotments are based on the following criteria:

1. Present range condition is unsatisfactory and/or needs improvement.
2. Allotments have moderate to high resource production potential and are producing at low to moderate levels.
3. Serious resource use conflict and/or controversy exits.
4. Opportunity exists for positive economic return from public investment.
5. Present management appears unsatisfactory and/or needs improvement.

Allotments in the "I" category require either a change in management practices to improve conditions and achieve a relatively high resource potential or mitigation of serious resource conflicts. The management objectives for "I" allotments are to improve current resource conditions or resolve conflicts. Therefore, "I" allotments will have first priority for monitoring and use supervision.

Range condition, trend and precipitation will be monitored on all "I" allotments. Utilization and actual livestock use will be monitored on the allotments that receive livestock grazing use. Other studies to monitor water and wildlife habitat will also be conducted. (Safford District RMP, EIS (Final) 1991.

Refer to Table 3 for land acreage on the Horse Mountain allotment.

Table 3. Land Status by Acreage on the Horse Mountain Allotment.

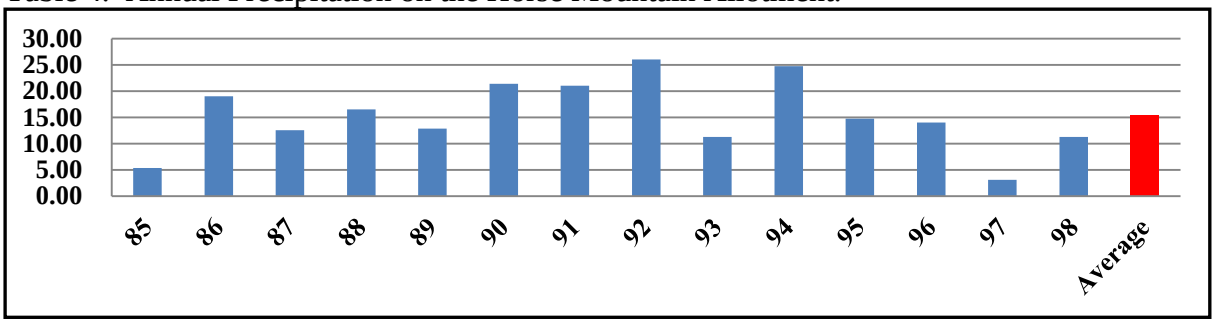
Land Status of Horse Mountain Allotment # 4524	
	Acres
Public Land	**2,231**
Private Land	**0**
State Lands	**213**
Total	**2,444**

4.2 Climate

The climate is typical semi-arid desert and low mountains with hot summers and mild winters. Some precipitation may fall as snow, but the majority falls as rain. From 1985 through 1998, a

rain gauge was maintained on the Horse Mountain Allotment with an average rainfall of 15.27 inches (Table 4).

Table 4. Annual Precipitation on the Horse Mountain Allotment.



The nearest and most consistently collected precipitation data is from the Black Rock Allotment (Table 6), which is eight miles east of the Horse Mountain Allotment.

Table 6. Black Rock Rain Gauge Data.

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total	Decadal Average	Decadal Median
1980											0.26	0.90			
1981	1.03	2.47	2.62	0.95	1.23	0.48	2.76	1.60	2.49	0.38	2.17	0.04	18.22		
1982	5.99	2.55	3.02	0.37	1.34	0.04	1.86	1.40	1.90	0.00	2.18	4.13	24.78		
1983	5.52	2.48	6.25	0.75	0.00	0.00	2.80	1.67	4.36	6.05	3.37	3.77	37.02		
1984	0.85	0.09	0.11	1.35	0.26	0.48	4.61	3.99	3.03	2.43	1.79	4.96	23.95		
1985	1.39	2.53	1.79	1.56	0.00	0.06	1.63	1.36	1.49	1.93	2.74	0.41	16.89	21.74	21.09
1986	0.04	3.45	5.53	0.03	0.30	0.11	4.06	3.48	1.91	2.48	2.20	2.68	26.27		
1987	1.67	3.21	2.02	74*	63*	0.79	1.07	1.39	1.57	0.76	0.60	2.73	15.81		
1988	1.86	1.84	0.00	2.78	0.13	0.41	2.50	2.99	0.78	0.86	2.03	0.41	16.59		
1989	1.84	0.06	0.83	0.03	0.42	0.00	1.85	5.08	0.02	1.68	0.00	0.67	12.48		
1990	1.29	2.78	2.57	0.81	0.07	0.31	5.24	2.94	1.88	0.72	2.60	4.19	25.40		
1991	1.50	1.95	7.32	0.00	0.00	0.10	1.61	3.53	0.14	0.83	1.53	3.78	22.29		
1992	3.16	3.89	3.70	0.34	3.57	..69	1.03	4.57	1.25	0.47	0.30	6.22	28.50		
1993	9.59	5.10	1.94	0.00	1.64	0.00	1.77	3.37	0.79	2.04	2.62	1.54	30.40		
1994	0.21	3.46	3.24	0.54	1.06	0.17	1.65	3.68	1.87	1.37	3.33	3.60	24.18		
1995	5.51	3.04	2.41	1.31	1.04	0.00	0.58	5.09	1.36	0.00	1.20	0.75	22.29	23.44	22.29
1996	0.07	5.08	0.38	0.12	0.03	0.75	2.54	4.52	3.64	1.70	0.95	0.02	19.80		
1997	3.60	3.31	0.64	*	0.47	0.86	1.33	1.96	1.61	1.92	2.03	4.38	22.11		
1998	1.29	6.94	3.04	0.87	0.00	0.46	4.62	4.57	0.32	1.38	2.39	0.92	26.80		
1999	0.16	0.08	0.62	1.78	0.00	0.10	6.58	3.10	2.15	0.00	0.00	0.00	14.57		
2000	0.76	1.02	1.18	0.00	0.00	1.50							4.46*		
2001							2.50	3.40	0.00	0.90	0.30	0.65	7.75*		
2002	0.00	0.00	0.40	0.00	0.00	0.00	1.90	1.67	1.35	1.35	0.22	0.30	7.19		
2003	0.37	3.45	1.20	0.00	0.00	0.25	3.67	1.45	2.55	0.30	1.50	1.55	16.29		
2004	2.75	1.20	2.45	1.91	0.00	0.00	1.60	1.00	1.50	0.40	0.00	0.00	12.81		
2005														14.11	16.29
2006															
2007	1.75	3.50	1.75	0.30	0.00	0.00	2.25	3.95	0.30	0.00	0.30	5.45	19.55		
2008	1.00	4.25	0.00	0.00	0.00	0.00	9.00	0.00	2.00	0.00	0.60	1.80	18.65		
2009	0.40	0.65	0.00	0.00	0.00	0.00	0.80	0.40	2.20	0.00	0.00	1.60	6.05		
2010	7.80	3.35	0.65	0.25	0.00	0.00	3.15	0.40	0.80	0.20	0.00	1.60	18.20		
2011	0.00	0.00	0.55	0.20	0.00	0.00	2.55	3.80	1.50	0.40	0.50	2.80	12.30		
*data omitted from average									Average Annual Precip.				19.98		

4.3 Cultural Resources

Issuance of the permit constitutes a Federal Undertaking under Section 106 of the National Historic Preservation Act (NHPA). The Area of Potential Effect (APE) has been determined to be the public lands within the grazing allotment.

In compliance with the BLM Cultural Resources Programmatic Agreement, the Arizona BLM-SHPO Protocol, the 1980 Programmatic Memorandum of Agreement between the BLM, Advisory Council on Historic Preservation, and the National Conference of State Historic Preservation Officers Regarding the Livestock Grazing and Range Improvement Program, and the BLM 8100 Manual series, the following actions have been taken to identify cultural resources located in the APE, evaluate the eligibility of cultural resources for listing in the National Register of Historic Places (NRHP), determine the effect of the undertaking on eligible cultural resources, and design mitigation measures or alternatives where appropriate.

The State Historic Preservation Officer (SHPO), the Advisory Council on Historic Preservation, and Indian tribes having historical ties to Arizona public lands were consulted during the preparations of the Upper Gila/San Simon Grazing Environmental Impact Statement (9/78) and the Safford Resource Management Plan (8/91). Indian tribes were consulted at the beginning of the permit renewal process. There were no areas of Native American concern, Traditional Cultural Properties (TCP), or Sacred Sites identified during consultations.

Allotment case files, AMP files, range project files, Water Source Inventory files, and Cultural Resource files were reviewed to determine areas of livestock congregation and whether these areas have been previously inventoried for cultural resources. The records indicate that there were 17 areas of livestock congregation that required an intensive field inventory, which was completed on February 10, 2009. Twelve of the 17 congregation sites were located. The other five congregation sites were no longer identifiable as cattle congregation areas. One historic property was identified in an area of livestock congregation, however, since the site was not eligible for inclusion on the NRPH, no mitigation is recommended as a BLM responsibility or as a term or condition of the permit, to protect cultural values identified above.

As required by the Native American Graves Protection and Repatriation Act regulations at 43 CFR 10.4(g), the following should be added to the grazing lease/permit as a term and condition:

> If in connection with allotment operations under this authorization, any human remains, funerary objects, sacred objects or objects of cultural patrimony as defined in the Native American Graves Protection and Repatriation Act (P.L. 101-601; 104 Stat. 3048; 25 U.S.C. 3001) are discovered, the permittee shall stop operations in the immediate area of the discovery, protect the remains and objects, and immediately notify the Authorized Officer of the discovery. The permittee shall continue to protect the immediate area of the discovery until notified by the Authorized Officer that operations may resume.

* Properties refer to archaeological sites, Traditional Cultural Properties, and Sacred Sites.

4.4 Elevation and Topography

The elevation ranges from almost 6,180 feet at the top of Horse Mountain on the eastern boundary to about 3,700 feet in Arizona Gulch on the south boundary. The topography is moderately rough with some steep mountainous terrain. The elevation decreases to the south as the drainages make their way to Aravaipa Creek.

4.5 Recreation Resources

Recreational use is negligible on the Horse Mountain Allotment as access is currently limited by a locked gate on private land.

4.6 Soils and Ecological Sites

A complete soil survey of the area has not been conducted and ecological site descriptions and Reference Sheets have not been developed for all of the ecological sites found within the Horse Mountain allotment. Although the soil survey has not been completed, ecological sites can determined based on soil characteristics and vegetation present. Soils data is also available from a soil survey conducted directly north of the allotment on the San Carlos Apache Indian Reservation. The Horse Mountain allotment falls within Major Land Resource Area 38-1 (12-16 inches precipitation per year) and is composed of Clayey Hills, Volcanic Hills, Clayey, Limestone Hills, and Granitic Hills.

4.7 Vegetation

The southern end of the allotment is characterized by north facing chaparral covered steep slopes, which grade down to Deer Creek. Species present include: shrub live oak (*Quercus turbinella*), sugar sumac (*Rhus ovata*), whitethorn acacia (*Acacia constricta*), juniper (*Juniperus spp.*), and honey mesquite (*Prosopis glandulosa*). North of Deer Creek the aspect changes along with the soils, creating a diverse plant community composed of a mixture of perennial grasses, suffrutescent forbs, shrubs, succulents and desert trees. Native annual forbs and grasses, of both the winter and summer seasons, exist in the plant community. Periodic, naturally occurring, wildfires are important in maintaining the potential plant community. North facing slopes in this portion of the allotment have a higher percentage of mid-grasses and some cool season grasses that may not occur on south facing slopes. Table 7 provides the most current plant species list for the Horse Mountain Allotment. A species list was developed during the 2011 riparian-wetland assessment and can be found on page 19 under Standard 2 (Riparian-Wetland Sites) section.

Table 7. **Plant Species List for Horse Mountain, June 2006**

Perennial Grasses	Perennial Forbs	Trees and Shrubs
Arizona Cottontop (*Digitaria californica)*	Desert senna (*Cassia covesii*)	Agave (*Agave parryi*)
Bullgrass (*Muhlenbergia emersleyi*)	Spurge (*Euphorbia albomarginata*)	Barrel cactus (*Ferocactus wislizenii*)
Cane beardgrass (*Bothriochloa barbinodis*)	Wormwood (*Artemisia ludoviciana*)	Beargrass (*Nolina microcarpa*)
Green sprangletop (*Leptochloa dubia*)	Unk (HM-2)	Cholla (*Opuntia spp.*)
Plains lovegrass (*Eragrostis intermedia*)		Fairy duster (*Calliandra eriophylla*)
Sideoats grama (*Bouteloua curtipendula*)		Hedgehog cactus (*Echinocereus spp.*)
Spider threeawn (*Aristida ternipes*)		Honey mesquite (*Prosopis glandulosa*)
Slender grama (*Bouteloua repens*)		Juniper (*Juniperus spp.*)
Threeawn (*Aristida spp.*)		Mariola (*Parthenium incanum*)
		Mountain mahogany (*Cercocarpus montanus*)
		Pinyon pine *(Pinus spp).*
		Shrubby buckwheat (*Eriogonum wrightii*)
		Shrublive oak (*Quercus turbinella*)
		Skunkbush sumac (*Rhus trilobata*)
		Snakeweed (*Gutierrezia sarothrae*)
		Sotol (*Dasylirion wheeleri*)
		Spanish dagger (*Yucca baccata*)
		Velvet mesquite (*Prosopis velutina*)
		Wait-a-bit mimosa (*Mimosa biuncifera*)
		Whitethorn acacia (*Acacia constricta*)
		Yerba-de-pasmo (*Baccharis pteronioides*)

4.8 Visual Resources

Visual Resource Management (VRM) Classes I____ II_____ III_____ IV__X__

The objective of this class is to provide for management activities that require major modification of the existing character of the landscape. The level of change to the characteristic landscape can be high. These management activities may dominate the view and be the major focus of viewer attention. Every attempt should be made, however, to minimize the impact of these activities through careful location, minimal disturbance and repeating the basic elements.

4.9 Wildlife and Special Status Species

Horse Mountain allotment provides habitat for mule deer (*Odocoileus hemionus*), white-tailed deer (*Odocoileus virginianus couesi*), black bear (*Ursus americanus*), mountain lion (*Puma concolor*), bighorn sheep (*Ovis canadensis*), and a diverse herpetofauna. Bighorn sheep, mule deer, and white-tailed deer benefit from regular fires which create re-sprout (Urness, *et al*., 1971), edge effect, new growth, and visual openness without which, bighorn sheep are susceptible to mountain lion predation (Bleich, *et al*., 2008).

A query of the Arizona Game and Fish Department Heritage Data Management System produced a list of special status species and critical habitat found within five miles of the Horse Mountain Allotment (Table 3).

Table 3. Special Status Species Occurrences/Critical Habitat within Five Miles of Horse Mountain Allotment.

SCIENTIFIC NAME	*COMMON NAME*	*ESA*	*BLM*	*STATE*
Strix occidentalis lucida	Designated Critical Habitat for Mexican spotted owl			
Eriogonum capillare	San Carlos Wild-buckwheat	SC		SR
Lithobates yavapaiensis	Lowland leopard Frog	SC	S	WSC

FWS = U.S. Fish and Wildlife Service
BLM = Bureau of Land Management
C = Candidate
T = Threatened
E = Endangered
S = Sensitive
SR = State Restricted
WSC = Wildlife Species of Concern

Critical Habitat for Mexican spotted owl is located on US Forest Service lands within the Santa Teresa Mountains, on the eastern edge of the Horse Mountain Allotment. There is no designated Critical Habitat on the Horse Mountain Allotment. US Forest Service surveys for Mexican spotted owls in the Santa Teresa Mountains have not documented their presence (A. Casey, Personal Communication, July 9, 2012). Activities on the Horse Mountain allotment would not affect Mexican spotted owl designated critical habitat.

San Carlos wild-buckwheat may be found in sandy, ephemeral washes and may be within the Horse Mountain allotment. A search of botanical databases (SeinNet) does not show any records of San Carlos wild-buckwheat being collected within the allotment boundaries, but this may be a reflection of collecting activity, rather than presence or absence of the species. Management factors identified as making this species vulnerable, within its limited range, are historic over-grazing and OHV's (AZGFD 2003).

Lowland leopard frogs require perennial water. The Horse Mountain Allotment supports at least one masonry dam with a tank and springs, which could potentially support lowland leopard frogs. Lowland leopard frogs were not observed during 2011 riparian assessment. There is no record of a frog inventory having been conducted on the allotment, so it is unknown if they are present.

The federally endangered Ocelot are not known to occur on the Horse Mountain allotment and there are no records of their occurrence there. However, given the species wide range and the potentially suitable habitat on the allotment, there is the potential for their occurrence.

The ocelot uses a wide range of habitats throughout its range in the Western Hemisphere (Tewes and Schmidly 1987). Despite this, the species does not appear to be a habitat generalist. Ocelot

spatial patterns are strongly linked to dense cover or vegetation, suggesting it uses a fairly narrow range of microhabitats (Emmons 1988, Horne 1998). Threats generally include habitat loss, habitat fragmentation, logging, and harvest of the ocelot and its prey. Ocelot hunting varies between and within countries, and is legal in Ecuador, El Salvador, Guyana, and Peru. Ocelot populations appear to be rebounding in parts of its range, perhaps due to a decrease of hunting since the end of the 1980s. In the absence of hunting the ocelot seems tolerant of human settlement and activities if large forests and sufficient prey are available. The Arizona/Sonora ocelot subspecies (L. p. sonoriensis) occurs in southern Arizona and northwestern Mexico (Sonora and northern Sinaloa) (López-Gonzalez et al. 2003; Murray and Gardner 1997). Breeding populations occur in the States of Sonora and northern Sinaloa.

In November 2009, the first live ocelot was documented in Arizona (in Cochise County) with the use of camera traps. Additionally, in April 2010, an ocelot was found dead on a road near Globe, Arizona, and a genetic analysis is underway to determine the origin of this specimen, although preliminary data indicate the young male ocelot was not of captive origin. Additional sightings have been documented in southeastern Arizona in 2011 and 2012. Prior to these findings, the last known ocelot in Arizona was lawfully shot on Pat Scott Peak in the Huachuca Mountains in 1964 (Hoffmeister 1986, Lopez Gonzalez et al. 2003). In addition to the recent Arizona sightings, a number of ocelots have been documented just south of the U.S. border in Sonora, Mexico. Specifically, with the use of camera traps, at least 4 ocelots have been documented since February 2007 in the Sierra Azul, 30-35 miles southeast of Nogales; and 1 ocelot was documented in 2009 in the Sierra de Los Ajos, about 30 miles south of the U.S. border near Naco, Mexico. Lopez Gonzalez et al. (2003) obtained 36 verified ocelot records for Sonora, 21 of which were obtained after 1990. Twenty-seven (75%) of the records for which they could determine the biotic community association were associated with tropical and subtropical habitats, namely subtropical thornscrub, tropical deciduous forest or tropical thornscrub. A population of 2,025 + 675 ocelots in Sonora was estimated by Lopez Gonzalez et al. (2003) based on the distribution of these records and the availability of potential habitat. Human population growth and development continue throughout the ocelot's range. Connectivity among ocelot populations or colonization of new habitats is discouraged by the proliferation of highways and increased road mortality among dispersing ocelots. Increased illegal and law enforcement actions along the U.S./Mexico international border could limit ocelot movement across the border, but it is uncertain if and how much this is affecting that movement.

Connoly (2009) recommends that habitats with more dense vegetation than surrounding areas, be considered as ocelot travel corridors between habitats. The draft Ocelot Recovery Plan (USFWS, 2010) identifies such corridors as providing 'critical landscape connectivity'.

5.0 Allotment Specific Objectives Related to Arizona Standards for Rangeland Health

The Safford Resource Management Plan (RMP) was completed in 1991 and incorporated the

Upper Gila/San Simon Grazing EIS, 1978, which outlined general land management objectives. Allotments within the Improve category were directed to develop an allotment management plan, if one was not already in place, to improve resources or reduce conflicts within the allotment. The Horse Mountain Allotment Management Plan was completed in 1988 and is outlined below.

5.1 Allotment Management Plan Objectives:

The following objectives are identified in the allotment management plan and were signed by the permittee and the BLM.

General Objectives

To manage livestock grazing use on the Horse Mountain Allotment so as to provide sufficient desirable forage and water necessary for both livestock and wildlife, maintain the watershed in a healthy condition, and maintain scenic, natural, and cultural values.

Key Area Objectives

1. Two key areas are located within the allotment. Utilization and trend studies will be conducted on the key areas in accordance with procedures prescribed in the BLM Manual. These areas, if utilized properly will represent the condition and trend of major portions of the allotment.

2. Key Species are desirable plant species for forage and watershed protection. They provide a means of measuring the effects of livestock grazing and progress toward objectives. The key species for the two key areas along with percent cover and percent composition are listed next.

3. Plant cover of key species.

P = % cover in 1979 F = % cover in 1994

	Key Areas			
Species	HM-1		HM-2	
	P	F	P	F
Side oats	1	5	3	6
Mountain Mahogany			2	4
Shrubby Buckwheat	9	11	11	12

4. Plant composition of key species.

P = % composition in 1979 F = % composition in 1994

	Key Areas			
Species	HM-1		HM-2	
	P	F	P	F

Side oats	2	8	7	11
Mountain Mahogany			6	9
Shrubby Buckwheat	18	22	28	30

Rangeland Management

Management System. This grazing system will be based on the proper use concept, which allows 40% utilization of the current year's growth on key species.

With the proper livestock numbers, the forage utilization level will decrease, allowing the forage plants to retain more photo-synthesizing material, increase their vigor, deposit more litter, and produce more seed. The reduction in livestock numbers will lessen livestock competition with wildlife, result in an increase in litter and a decrease in trampling, increase plant vigor, and will improve the watershed condition.

5.2 Monitoring Data

Percent ground cover data was collected at sites HM-1 and HM-2. Bare ground decreased at both sites over-time. A reduction in bare ground may indicate that the site is becoming stabilized as it is less prone to wind and water erosion (Tables 8 and 9).

Table 8. Percent Ground Cover at Site: HM-1.

Ground Cover	7/26/79	7/11/85	6/8/2006	8/30/2011
Bare Ground	39.0	36.0	24.0	18.0
Large Rock	14.0	14.0	22.0	20.0
Small Rock	11.0	16.0	16.0	23.0
Persistent Litter	6.5	1.0	*	*
Non-Persistent Litter	28.0	30.0	32.0*	30.0*
Vegetation Base	1.5	3.0	6.0	9.0
TOTAL	100.0	100.0	100.0	100.0

*2006, 2011 = All litter combined

Table 9. Percent Ground Cover at Site: HM-2.

Ground Cover	5/6/80	7/11/85	6/20/2006	8/30/2011
Bare Ground	4.0	28.0	12.4	1.0
Large Rock	19.0	14.0	19.4	5.0
Small Rock	20.0	20.0	18.4	29.0
Persistent Litter	5.5	2.5	*	*
Non-Persistent Litter	46.0	29.0	39.8*	48.0*
Vegetation Base	5.5	6.5	10.0	17.0
TOTAL	100.0	100.0	100.0	100.0

*2006, 2011 = All litter combined

Trend Plots Data

Monitored trend refers to the direction of vegetation change over time. Trend data are important in determining the effectiveness of on-the-ground management actions and evaluating progress toward meeting management objectives.

Broom snakeweed (*Gutierrezia sarothrae*) (Table 10) increased on both monitoring sites. Snakeweed provides little browse for domestic livestock, but is used moderately by mule deer (Krausman, *et al*., 1997) and in Montana is a winter food source for bighorn sheep (Keating, *et al*., 1985). Broom snakeweed seeds are palatable and are readily eaten by a wide variety of small birds and mammals.

Snakeweed can be an indicator of overgrazing, however, it is also considered cyclical, and heavy infestation can be an indicator of weather conditions rather than overgrazing. Both are likely contributors. Another contributor is lack of naturally occurring fires. Broom snakeweed is severely damage by fire, but will reestablish rapidly from adjacent unburned areas. This is problematic if other more desired and palatable species fail to establish first as broom snakeweed often increases after fire.

Table 10. Trend Plot Data for Sites HM-1 and HM-2.

HM-1, 3'x3' Trend Plot Data, Horse Mountain Allotment, Safford Field Office				HM-2, 3'x3' Trend Plot Data, Horse Mountain Allotment, Safford Field Office		
%Cover	7/26/79	7/11/85		**%Cover**	5/6/80	7/11/85
Sideoats grama	2.49	7.18		Sideoats grama	4.03	5.78
Shrubby buckwheat	7.53	43.40		Shrubby buckwheat	15.58	15.23
Snakeweed	0.07	25.20		Snakeweed	0.00	2.10
Spurge	0.00	0.18		Spurge	1.23	0.00
				Mountain mahogany	12.25	11.20
				Squirreltail	0.00	0.35
Litter	8.30	0.00		Litter	56.35	0.00
TOTAL	18.39	75.96		**TOTAL**	89.44	34.66
%Composition	7/26/79	7/11/85		**%Composition**	5/6/80	7/11/85
Sideoats grama	24.60	9.5		Sideoats grama	12.2	16.7
Shrubby buckwheat	74.70	57.1		Shrubby buckwheat	47.1	44.0
Snakeweed	0.70	33.2		Snakeweed	0.0	6.0
Spurge	0.00	0.2		Spurge	3.7	0.0
				Squirreltail	0.0	1.0
				Mountain mahogany	37.0	32.3
TOTAL	100.00	100.00		**TOTAL**	100.00	100.0

Percent composition (Table 11) and pace frequency data have replaced the three by three trend plots for trend monitoring.

Table 11. Percent Composition by Species by Dry Weight Rank at Sites HM-1 and HM-2, 2006.

Percent composition	HM-1	HM-2
Perennial grasses	**%**	**%**
Arizona cottontop	0	3.18
Bullgrass	0	1.79
Cane beardgrass	0	3.38
Plains lovegrass	0	3.57
Sideoats grama	69.81	76.46
Slender/sprucetop grama	0	1.89
Spidergrass	0	0.89
Perennial forbs		
Spurge	0.10	0.00
Trees and shrubs		
Agave	0.10	0.00
Barrel cactus	0.29	0.10
Beargrass	0.00	0.30
Fairy duster	0.00	0.10
Juniper	12.78	0.00
Mesquite	4.72	0.00
Pinyon pine	0.10	0.00
Shrubby buckwheat	0.20	4.27
Shrub live oak	0.29	0.10
Skunkbush sumac	0.00	0.10
Snakeweed	10.62	3.67
Wait-a-bit mimosa	0.20	0.00
Whitethorn acacia	0.79	0.00
Yerba-de-pasmo	0.00	0.20

Frequency describes abundance and distribution of a species. Therefore, it is useful in detecting changes in a plant community over time. It's highly repeatable and rapid as it requires a minimum number of decisions. The decision is limited to identifying the species and determining whether or not species are rooted within the quadrats (presence or absence). Only one record for each species is recorded, regardless of the number of individual species present. Refer to Tables 12 and 13 for percent frequency at sites HM-1 and HM-2.

Table 12. Percent Frequency at Monitoring Site HM-1.

Percent frequency	HM-1	2006	2011
Perennial grasses		**%**	**%**
Arizona cottontop		0	0
Bullgrass		0	0
Cane beardgrass		0	0
Plains lovegrass		0	0
Sideoats grama		71	60
Sprucetop grama		0	0
Three-awn (*Aristida sp.*)		0	5
Curly mesquite		0	3
Spidergrass		0	0
Perennial forbs			
Spurge		1	0
Unknown		0	0
Trees and shrubs		2006 **%**	2011 **%**
Agave	Base	1	2
	Canopy	0	4
Barrel cactus	Base	1	0
	Canopy	0	0
Beargrass	Base	0	0
	Canopy	0	0
Cholla	Base	0	0
	Canopy	0	1
Fairy duster	Base	0	0
	Canopy	0	2
Juniper	Base	0	0
	Canopy	19	28
Mesquite	Base	0	1
	Canopy	12	15
Mountain Mahogany	Base	0	0
	Canopy	0	0
Pinyon pine	Base	1	0
	Canopy	0	2
		2006 **%**	2011 **%**
Shrubby buckwheat	Base	2	0
	Canopy	0	0
Shrublive oak	Base	0	0
	Canopy	1	1
Skunkbush sumac	Base	0	0
	Canopy	0	0
Snakeweed	Base	15	24
	Canopy	8	20
Sotol	Base	0	0
	Canopy	0	0
Spanish dagger	Base	0	0
	Canopy	0	0
Wait-a-bit mimosa	Base	0	1
	Canopy	2	2
Whitethorn acacia	Base	0	1
	Canopy	2	6
Yerba-de-pasmo	Base	0	0
	Canopy	0	1

Table 13. Percent Frequency at Monitoring Site HM-2.

Percent frequency	HM-2	2006	2011
Perennial grasses		**%**	**%**
Arizona cottontop		5	0
Bullgrass		2.5	0
Cane beardgrass		4	0
Cane bluestem		0	4
Plains lovegrass		5	0
Sideoats grama		86.1	78
Slender/sprucetop grama		2	3
Spidergrass		1	5
Aristida sp.		0	12
Perennial forbs			
Spurge		0.5	
Unknown		1	
Mallow			9

		2006	2011			2006	2011
Trees and shrubs		**%**	**%**			**%**	**%**
Agave	Base	0	0	Shrubby buckwheat	Base	9	14
	Canopy	0	0		Canopy	1.5	0
Banana yucca	Base	0	0	Shrublive oak	Base	0	0
	Canopy	0	0		Canopy	3.5	0
Barrel cactus	Base	1	0	Skunkbush sumac	Base	0	0
	Canopy	0	0		Canopy	1.5	0
Beargrass	Base	0.5	0	Snakeweed	Base	7	0
	Canopy	2	4		Canopy	5	5
Cholla	Base	1.5	0	Sotol	Base	0	0
	Canopy	0	0		Canopy	0.5	0
Fairy duster	Base	2.5	0	Spanish dagger	Base	0	0
	Canopy	0	0		Canopy	0.5	0
Juniper	Base	0	0	Wait-a-bit mimosa	Base	0	0
	Canopy	0	1		Canopy	0	0
Mesquite	Base	0	0	Whitethorn acacia	Base	0	0
	Canopy	0	0		Canopy	0	0
Mountain Mahogany	Base	0.5	0	Yerba-de-pasmo	Base	0	0
	Canopy	1	3		Canopy	0.5	0
Pinyon pine	Base	0	0				
	Canopy	0	0				

Figure 1. Photograph Looking West of the Horse Mountain Allotment.

Figure 2. Photograph Looking West along Deer Creek.

6.0 Management Evaluation

Purpose of the Evaluation
The purpose of this evaluation is to determine if existing multiple uses are meeting the Arizona Standards for Rangeland Health and Guidelines for grazing administration along with appropriate Land Use Plan and Activity Plan objectives. Standards are goals for the desired condition of the biological and physical components and characteristics of rangelands. Guidelines are management approaches, methods, and practices.

6.1 Standard 1. Upland Sites

Standard 1. Upland Sites

Upland soils exhibit infiltration, permeability, and erosion rates that are appropriate to soil type, climate and landform (ecological site).

As indicated by such factors as:

- *Ground Cover*
  - *litter*
  - *live vegetation, amount and type (e.g., grass, shrubs, trees, and etc.)*
  - *rock*

- *Signs of erosion*
  - *flow pattern*
  - *gullies*
  - *rills*
  - *plant pedestaling*

Based on the indicators, Standard 1 is being met.

Discussion

On July 1, 2009, an Upland Health Evaluation was completed on this allotment. A Natural Resources Conservation Service (NRCS) reference sheet was not available for this site. This evaluation was conducted based on the experience of the identification team conducting the assessment. The evaluation indicated that the Soil/Site Stability was within expectations. There were a few signs of active erosion that were primarily associated with the dirt road along Deer Creek. During 2006, this area experienced an extreme precipitation event, which contributed to the gullies seen during the site assessment and are currently stabilizing. There are no signs of rills, pedestaling, or other indicators of soil loss.

6.2 Standard 2. Riparian Wetland Sites

Maintain or improve riparian/wetland areas to facilitate proper functioning condition.

Standard 2. Riparian-Wetland Sites

Riparian-wetland areas are in properly functioning condition.

As indicated by such factors as:
- *Gradient*
- *Width/depth ratio*
- *Channel roughness and sinuosity of stream channel*
- *Bank stabilization*
- *Reduced erosion*
- *Captured sediment*
- *Ground-water recharge*
- *Dissipation of energy by vegetation*

Based on the indicators, Standard 2 is not being met. Livestock grazing is contributing to these springs not functioning properly and to the standard not being met in the allotment.

Discussion

The Bureau of Land Management defines a riparian area as being at least 0.10 miles in length and containing riparian-obligate species including Fremont cottonwood (*Populus fremontii*), Gooding's willow (*Salix gooddingii*), baccharis, and sedges. Proper Functioning Condition is a qualitative methodology used to assess the physical functioning of riparian and wetland areas that are at least 0.10 miles in length and which contain riparian-obligate species such as cottonwood, willow, seep willow, and/or sedges. Riparian and wetland areas are functioning properly when adequate vegetation, land form, or large woody debris are present to dissipate stream energy associated with high water flow events; filter sediment, capture bed load and aid floodplain development; improve flood-water retention and ground water recharge; develop root masses that are able to stabilize stream banks against cutting action; develop ponding and channel characteristics to provide the habitat and water depth, duration, and temperature necessary for fish production; and support greater diversity. Proper Functioning Condition only assesses hydrology, vegetation, and erosion/deposition.

Although little perennial water exists within the upper portion of Horse Mountain it does support obligate riparian vegetation, including Fremont cottonwood and sedges. A Proper Functioning Condition (PFC) assessment was completed at Deer Creek on June 23, 2011. The conclusions for riparian area on the Horse Mountain Allotment are discussed in the section below under hydrology, vegetation, and erosion deposition.

Hydrology: The section of Deer Creek evaluated is a relatively steep, valley-bottom system with occasional bedrock constraints. The riparian width is limited due to the narrow valley bottom, but potential extent (within valley bottom) has not been achieved.

Vegetation: There is a diverse age-class and composition of riparian-wetland vegetation, which indicate maintenance of riparian-wetland vegetation. During the assessment a species list was developed of those species either in Deer Creek or along the streambanks and included the following: Arizona walnut (*Juglans major*), Arizona sycamore, Fremont cottonwood, Seep willow (*Baccharis spp.*), salt cedar (*Tamarix spp.*), Pointleaf manzanita (*Arctostaphylos pungens*), canyon grape (*Vitis arizonica*), snakeweed (*Gutierrezia sarothrae*), cholla (*Opuntia spp.*), Bermuda grass ((*Cynodon dactylon*)), one-seed juniper (*Juniperus monosperma*), alligator juniper (*Juniperus deppeana*), beargrass (*Nolina microcarpa*), Arizona white oak (*Quercus arizonica*), and unidentified sedges. Streambank vegetation able to protect banks and dissipate energy during high flows is lacking in some areas; whereas other areas are dominated by Bermuda grass, which is a poor bank stabilizer, or shows signs of grazing, trampling, and bank instability. Both sapling sycamores and sedges are being grazed and trampled throughout the assessment area.

Erosion Deposition: Lateral and vertical channel movement are constrained by valley features and bedrock and has sufficient large and course material to dissipate energy during flow events.

6.3 Standard 3. Desired Resource Conditions

Productive and diverse upland and riparian-wetland communities of native species exist and are maintained.

As indicated by such factors as:
- *Composition*
- *Structure*
- *Distribution*

Based on the indicators, Standard 3 is being met in the uplands, but not in the aquatic and riparian areas of Deer Creek.

Discussion

On the southern end of the Horse Mountain allotment, the majority of the plant community is interior chaparral, which covers the north facing slopes as the topography descends to Deer Creek. Seeds of many chaparral plants require 30 years or more worth of accumulated leaf litter before they will successfully germinate. Low humidity, low fuel moisture, and high winds appear to be the primary factors in determining when a chaparral stand burns. This portion of the allotment exhibits high diversity of vegetative species and is in climax condition.

The northern end of the Horse Mountain allotment consists of broken topography which contains pinyon pine, juniper and perennial grass plant communities. While these areas are currently maintaining high levels of diversity, they may begin losing the perennial grass component as trees and shrubs shade out grasses and out-compete them during drought years. Key species vegetative cover have increased over the last 30 years (refer to section 5, Monitoring Data, Ground Cover HM-1, HM-2).

The desired resource condition for the uplands of the Horse Mountain allotment includes the maintenance of a diverse composition of native species to achieve multiple use objectives. The desired plant community objectives were set using the ecological site areas and summarized as functional-structure groups based on historic plant communities which would maintain soil integrity and ecological function. These were developed by the Natural Resource Conservation Service and are listed in Table 14.

The desired resource condition for the riparian area of Deer Creek is to expand the area of riparian vegetation.

Table 14. Percent Structure and Cover by Ecological Site.

Structure and Cover: Soil Surface Cover (%)														
			Basal Cover				Non-Vascular Plants	Biological Crust	Litter	Surface Fragments > 1/4 & <= 3"	Surface Fragments > 3"	Bedrock	Water	Bare Ground
Site ID	Precip. (in.)	Description	Grass/ Grasslike	Forb	Shrub/ Vine	Tree								
R038XB215AZ	16-20	Clayey Hills	4-8	0-1	2-8	0-1	0-1	0-1	15-55	25-50	5-15	5-15	0-0	3-15
R038XA117AZ	12-16	Volcanic Hills	3-6	0-1	2-5	0-1	0-1	0-2	10-45	25-50	5-15	5-25	0	5-20
R038XA104AZ	12-16	Granitic Hills	2-5	1-2	1-2	0-1	0	0-1	20-50	25-50	1-15	1-15	0	10-50
R038XA103AZ	12-16	Clay Loam Upland	6-12	0-1	1-2	0	0	1-10	10-60	15-60	0-15	0	0	10-60

7.0 Conclusion

Standard 1. Upland Sites

Upland soils exhibit infiltration, permeability, and erosion rates that are appropriate to soil type, climate and landform (ecological site).

Standard 2. Riparian-Wetland Sites

Deer Creek, on the Horse Mountain Allotment, was determined to be Functional-At Risk. The riparian area is not at its potential for distribution and diversity of species. Whether the trend is upward or downward is not apparent at this time and will require additional future monitoring.

During the assessment cattle were seen moving under the southwestern allotment boundary gap fence, which is located across Deer Creek. Under current conditions livestock can move freely between the Horse Mountain and Aravaipa allotments along Deer Creek. Maintenance or replacement of the aging boundary fences will be very important to ensure that cattle from adjoining allotments or the San Carlos Apache tribal lands are not entering the allotment.

Excluding livestock from the unnamed and Horse Springs will aid in protecting the spring resources. The rest-rotation and repair of boundary fences to exclude unauthorized livestock will improve riparian health within Deer Creek.

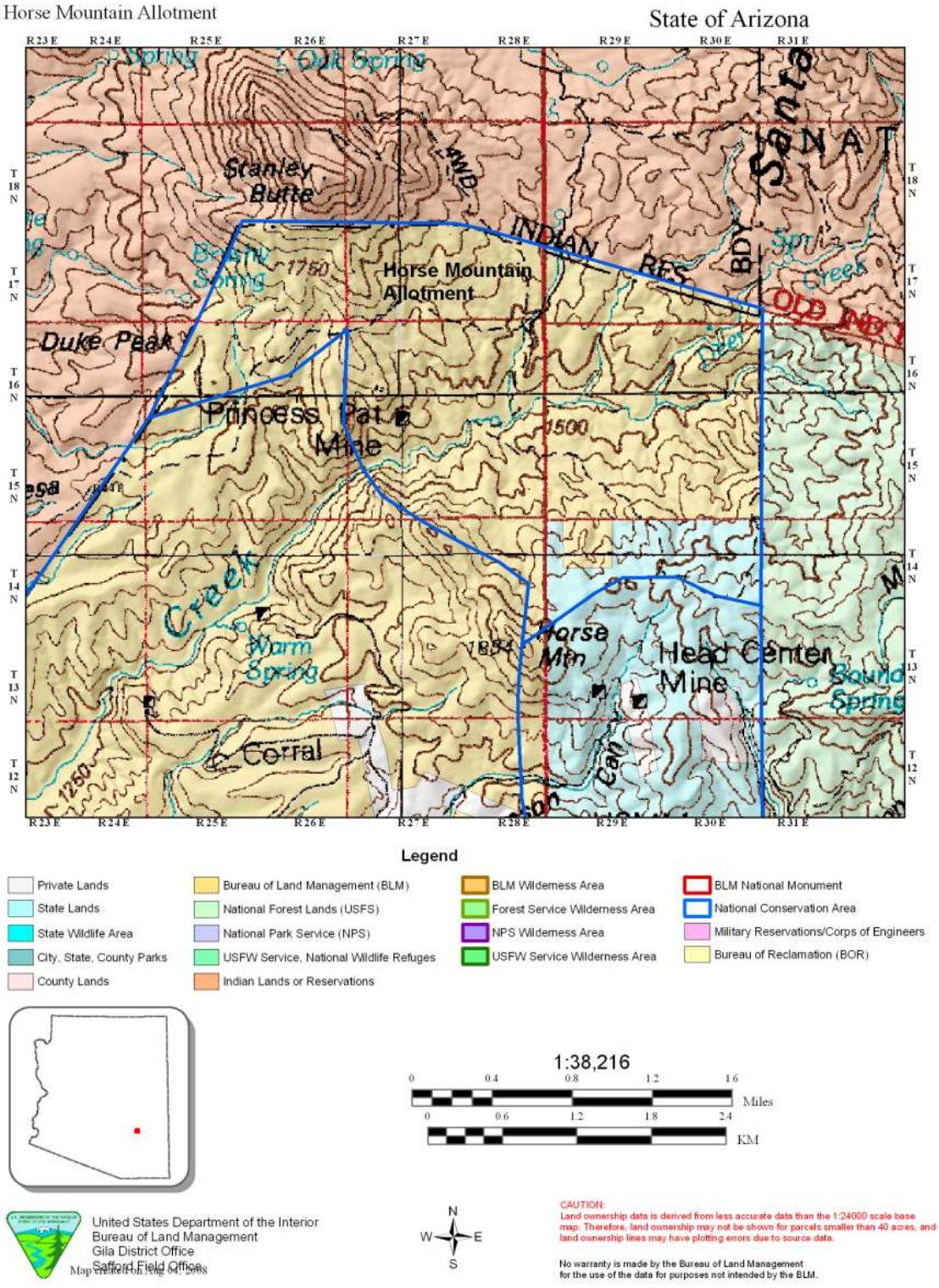
Existing range improvements identified in need of repair to function and aid in distributing livestock include: 1) Horse Mountain catchment needs to be cleaned out to remove excessive sedimentation as catchments act as sediment traps and fill over time, 2) unnamed spring needs a spring box installed near spring origin and connected to existing pipeline in addition to being fenced to allow establishment of vegetation, 3) Horse Spring should be fenced to protect spring, and the 5.5 acre sub-watershed above Horse Spring should be thinned to see if surface water can be returned to Horse Spring, 4) Horse Mountain pasture fence needs repair and/or replacement to function as intended.

Standard 3: Productive and diverse upland and riparian-wetland communities of native species exist and are maintained.

The Horse Mountain allotment currently maintains diverse upland vegetation, but aquatic and riparian vegetation are being affected by current livestock grazing. Monitoring indicates an increase in vegetative cover and maintenance of high levels of diversity in the uplands, but a loss of species diversity and vigor within the aquatic and riparian habitat zones. In addition, the north-facing slopes have transitioned to a climax shrub community and would benefit from fire and the resulting mosaic of successional stages and associated diversity.

Maintenance and repair of existing range projects, including pipelines, troughs, and fences will allow for better distribution and management of livestock across the allotment and reduce current concentration areas located along Deer Creek. See standard 2 above for riparian discussion.

Map 1. Horse Mountain Allotment.



8.0 Recommendations

Issue the 10-year grazing permit with the following terms and conditions (Table 15).

Table 15. Mandatory terms and conditions for the Horse Mountain Allotment.

Allotment	Livestock number	Kind	Grazing Period Begin	Grazing Period End	Type %PL	Use	AUMS
45240	26	Cattle/Horse	03/01	02/28	100	Active	312

The following other terms and conditions would be carried forward on the renewed permit:
As a term and condition of this permit, you are required to do the following:

1. Submit a report of your actual use made on the allotment for the previous grazing period March 1 to February 28. Failure to submit such a report by March 15 of the year may result in suspension or cancellation of your grazing permit or lease.
2. This permit is subject to future modification as necessary to achieve compliance with the standards and guidelines (43 CFR 4180).
3. Permittees are required to maintain all range projects for which they have maintenance responsibilities.
4. With the exceptions of salt and or mineral blocks, supplemental feeding is not authorized on public lands unless prior approval is requested and given by the authorized officer.
5. Salt and/or mineral blocks shall not be placed within one quarter (1/4) mile of water sources, springs, streams, and riparian habitats.
6. All troughs would be outfitted with wildlife escape structures to provide a means of escape for animals that fall in while attempting to drink or bathe.
7. Livestock would be excluded from unnamed spring and Horse Spring.
8. This permit is subject to all terms and conditions found on the back side of this permit.
9. If in connection with allotment operations under this authorization, any human remains, funerary objects, sacred objects or objects of cultural patrimony as defined in the Native American Graves Protection and Repatriation Act (P.L. 101-601; 104 Stat. 3048; 25 U.S.C. 3001) are discovered, the permittee shall stop operations in the immediate area of the discovery, protect the remains and objects, and immediately notify the Authorized Officer of the discovery. The permittee shall continue to protect the immediate area of the discovery until notified by the Authorized Officer that operations may resume.

Beginning on November 16, of the year in which the permit is re-issued, the Horse Mountain and Catchment pastures would be rotated between with seasons of use between May 15 through November 15 and November 16 through May 14. The allotment would be rested between rotations to provide rest for warm and cool season species and riparian vegetation (Table 16.).

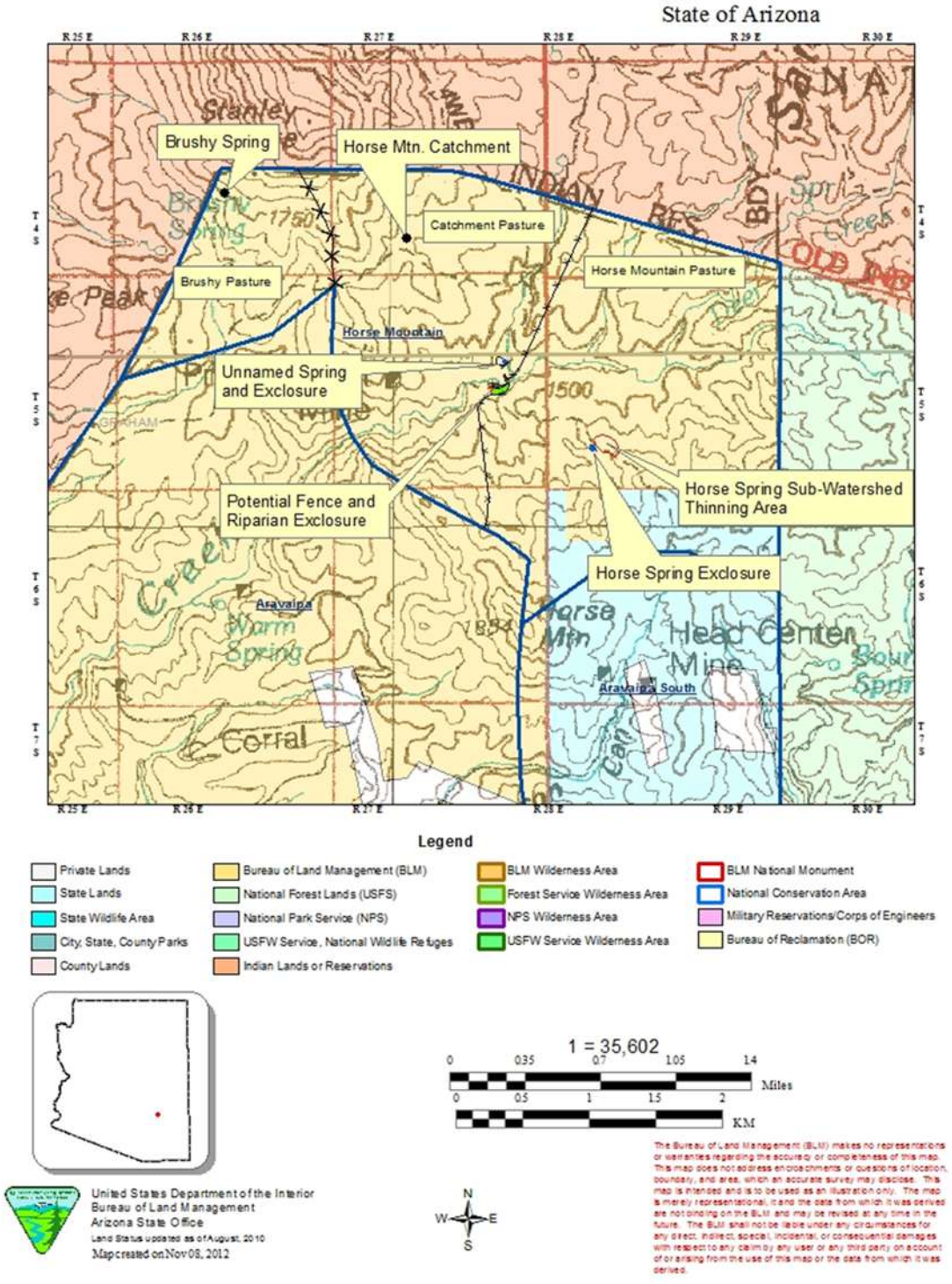
Table 16. Horse Mountain Grazing Rotation

	15-May	Jun	Jul	Aug	Sep	Oct	15-Nov	16-Nov	Dec	Jan	Feb	Mar	Apr	14-May
2013	Allotment Rested							Horse Mtn Pasture						
2014	Catchment Pasture							Allotment Rested						
2015	Horse Mtn Pasture							Catchment Pasture						
2016	Allotment Rested							Horse Mtn Pasture						
2017	Catchment Pasture							Allotment Rested						
2018	Horse Mtn Pasture							Catchment Pasture						
2019	Allotment Rested							Horse Mtn Pasture						
2020	Catchment Pasture							Allotment Rested						
2021	Horse Mtn Pasture							Catchment Pasture						
2022	Allotment Rested							Horse Mtn Pasture						
2023	Catchment Pasture							Allotment Rested						

The BLM will construct a fence around unnamed spring (Approximately 750’ perimeter encompassing 0.9 acres), and Horse Spring (approximately 210’ perimeter encompassing 0.13 acres) to provide protection from livestock grazing and loafing. Map 2. shows locations of the two fencing projects and existing range projects. Fencing specifications will be consistent with Arizona Game and Fish Department and BLM standards for wildlife. Each exclosure would have a locked gate which may be opened to allow egress of livestock in the event of their unauthorized entry into the exclosure. Unnamed spring would receive a spring box which would overflow to maintain hydric soils around the spring. Unnamed spring would be monitored to ensure that there is adequate water to maintain hydric soils at the spring box. If flows drop below these levels the existing pipeline to the livestock trough would be shut off.

The BLM will thin (by selectively cutting chaparral vegetation with hand tools) the 5.5 acre sub-watershed above Horse Spring. Cuttings would be scattered on areas of bare ground. Currently there is no surface water at Horse Spring. If flows return an additional future analysis may be completed to determine if there is sufficient water to pipe outside of the exclosure.

Map 2. Existing and Proposed Infrastructure.



The proposed grazing rotation with the included periods of rest in Table 2 should allow for recruitment and retention of warm and cool season grasses as well as riparian plant communities. If, after three years, there is no improvement to the riparian habitat, an additional 190' fence would be built between the Horse Mountain corrals and pasture fence. This would create a 1.4 acre exclosure along Deer Creek. The effectiveness of this exclosure and vegetation response would be monitored for five years and assessed for its effectiveness and management implications.

Other Management Actions

Unnamed and Horse Spring and would be fenced to exclude livestock. The 5.5 acre sub-watershed above Horse Spring would have vegetation thinned in an attempt to restore flows to Horse Spring.

To reduce erosion water bars or rolling dips would be installed along roadways, where active erosion is occurring, when completing any road maintenance activities.

The Bureau of Land Management should complete an assessment on the Horse Mountain Allotment for the possibility of implementing prescribed fire(s). This may require implementation of mechanical and/or chemical fuel reductions to ensure that control can be maintained, especially due to Mexican spotted owl critical habitat being adjacent to the allotment. A mosaic fire through the chaparral portions of this allotment would temporarily open up areas of canopy, increasing forbs and grasses, encouraging re-sprouting of shrubs, which benefits deer and bighorn sheep, creates edge effect, and creates visual openness which allows bighorn sheep to move more freely through the area. Other areas of the allotment (non-chaparral) would benefit from fire in reducing shrub encroachment. These actions may take multiple years to plan and implement and would be dependent on funding and staffing resources available.

9.0 Selected Management Action

Issue the 10-year grazing permit with the following terms and conditions.

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10. Consultation

Prepared By/Staff Review: Signature

Jeff Conn, Natural Resource Specialist _____
RJ Estes, Rangeland Management Specialist _____
Deb Morris, Recreation/Wilderness Specialist _____
Heidi Blasius, Fisheries Biologist _____
Dan McGrew, Archaeologist _____
Chris Morris, Hydrologist _____
Dave Arthun, Rangeland Management Specialist _____

AUTHORIZED OFFICER CONCURRENCE:

_____ I concur with the conclusions and recommendations as written.

_____ I do not concur.

_____ I concur, but with the following modifications.

_____ _____
Scott Cooke Date
Field Office Manager

10.0 Literature Cited

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